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THE STRUCTURE OF THOUGHT



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THE STRUCTURE OF THOUGHT

THE
STRUCTURE OF THOUGHT

A SURVEY OF NATURAL PHILOSOPHY

by
LUDWIG FISCHER

Translated by
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LONDON

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*The German original, "Die natürliche Ordnung unseres Denkens"
was published in 1927*

FIRST PUBLISHED IN GREAT BRITAIN IN 1931

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TRANSLATOR'S NOTE

THE expression "form of relation" occurs throughout as a translation of "Beziehungsform". It seems to me to mean:

(a) The particular form in which a particular kind of relation is manifested;

(b) The particular quality or nature of a relation.

Further, it seems to me impossible always to distinguish which meaning it is intended to possess. Sometimes it seems to have both meanings simultaneously.

Essence is used to translate *Wesen*. By this the author means at once that which is the essential part of a thing, and also an existing, substantial thing itself. It is the rudimentary form of what becomes a Thing or Individual at a later stage. The author considers this meaning of *Wesen* close enough to that which it bears in Hegel to warrant translation by the same word; and since *Essence* is McTaggart's rendering of the Hegelian *Wesen*—a rendering adopted by L. G. Struthers and myself in our translation of the Greater Logic—it seemed best to use *Essence* in the present work as a translation for *Wesen*.

The words *prime* and *fundamental* are used consistently to translate *ur-* and *grund-* respectively.

The chapter on Rehmke was rewritten by the author for the English edition.

W. J.

April 1930.

PREFACE TO THE ENGLISH EDITION

I BEGIN with a quotation from the well-known mathematician Hilbert. "Every conceivable object of scientific thought becomes a proper subject for the axiomatic method, and hence indirectly for mathematics, as soon as it has been developed so far as to be ripe for the formation of a theory. By penetrating to progressively deeper strata of axioms in the sense previously explained, we obtain a deeper insight into the nature of scientific thought, and become more and more thoroughly convinced of the unity of our knowledge; and it would appear that by virtue of the axiomatic method mathematics seems destined to take a leading part in the general body of science."¹ By rights this leading part should belong to philosophy; for it is the task of philosophy to define the general concepts used by the other sciences, and to explain the relations subsisting between them. Hitherto, however, philosophy, more even than the other sciences, has failed to grapple with this problem, and in consequence has failed to obtain a firm scientific foundation.

It is true that Bertrand Russell has undertaken the task of applying the method of axioms² to logic in the manner indicated by Peano;³ and, with respect to the requirements of mathematics, he has completed this task. During the last decades a vast volume of work has been done in this direction. But although Bertrand Russell once expressed the hope "that some readers may be sufficiently interested to advance to a study of the method by which mathematical logic can be made helpful in investigating the traditional problems of philosophy",⁴ philosophers in general have not availed themselves of this method. It is three hundred years since Descartes made the attempt to set up a system of axioms for philosophy;⁵ and the concepts and axioms with which he operated were complicated and had never been cleared up adequately, and in consequence the system was destined to remain sterile.

Any strict philosophical method is compelled in the first instance

¹ Hilbert, "Axiomatisches Denken", *Math. Annalen*, vol. 78, pp. 405 sqq.

² Russell, *The Principles of Mathematics*, vol. i, 1903. Whitehead and Russell, *Principia Mathematica*, second edition., 1925, especially vol. i, pp. 91 sqq.

³ Peano, *Formulaire de Mathématiques*, cp. § 1 of vol. ii, Turin, 1897. Cp. also Boole, *Laws of Thought*, 1854.

⁴ Russell, *Introduction to Mathematical Philosophy*, second edition, London, 1920, Preface, p. vi.

⁵ Descartes, "Rationes . . . probantes" in the Amsterdam edition of the *Meditationes*, 1654, pp. 85 sqq.

to deal with certain groups of universal concepts, of which the following are the most important:

Unity, Multiplicity, Manifoldness (Determinateness).
 Thing (Individual), Substance, Existence.
 Ego, non-Ego (Subject-object), Consciousness.
 Continuity, Space, Time, Becoming.
 Relation (Reciprocal Relation), Cause, Effect.
 Actuality, Truth, Potentiality.

Next to these there stand a number of more complex concepts which it is the function of the other sciences to elucidate, such as force and matter, soul and body, God and world, and Thought. Others, like justice, beauty and value, stand still further in the background.

So much for a rough definition of the questions to which it appears desirable to apply scientific treatment of the nature of the axiomatic method.—In order briefly to describe the latter we may say that a number of fundamental concepts are set up, between which reciprocal relations are established through a number of propositions (or axioms); the *structure* of the whole of the region which it is proposed to investigate is determined exclusively by means of this system of axioms. The structure is next analysed by means of an explicit illumination of all the relations which are given implicitly in the system of axioms. Consequently the problem is to select the system of axioms in such a manner that the analysis of the structure, without the extraneous help of any other concepts, suffices to give us a derivation of the whole region which, within any given science, it is desired to comprehend and to order. It is further postulated that in this process the system of axioms shall be such as to permit us to exhaust the whole of the problem with a minimum of axioms and concepts, and that the method shall be the simplest and clearest possible.

Thus the question arises for philosophy whether it is possible to find a system of axioms of such a kind that a bare analysis of a given structure suffices in order to permit us to *develop* the guiding concepts of philosophy; that is, to trace back these concepts to the simpler concepts of the system of axioms, and thus to explain them to the full, while at the same time the relations between these concepts are elucidated, and the preliminary work is done which later permits these concepts to be employed in the other sciences.

It depends upon the manner in which this task is solved whether philosophy will be counted among the strict sciences, the notion of science being understood in the exact sense in which during the last thirty years it has been developed by mathematics and logic. Physics and mechanics are about to become sciences in this exact sense, and it is necessary that philosophy shall follow their example. And indeed philosophy has the power to do so.

Now that this new concept of science has established itself, an attempt at least must be made in the hope that philosophy may succeed in ranking by the side of mathematics or even in taking over the lead from it. For this an essential condition is the application of the axiomatic method: this is a problem that can no longer be evaded. The present work is an attempted solution of this problem.

In the first division of the first Part, I begin with detailed preliminary investigations, and finally discover an exceedingly general concept; this is treated as the axiomatic fundamental concept. I proceed to define it in every direction. This fundamental concept is the concept of an orderly multiplicity (a multiplicity arranged in gradations), the units within which, while opposite to one another, also reciprocally determine one another. It is a unity complete in itself; formally, however, it can be resolved into two pairs of concepts, each of which is the condition of the other. These are determinateness combined with reciprocal dependence; and unity-and-multiplicity combined with Order (or gradation). These concepts, which taken separately are incomplete, correspond to the four logical categories of quality, relation, quantity, and modality. From this formal resolution of the fundamental concepts there follows a corresponding fundamental postulate, namely, that the fundamental concept must throughout in every formal subdivision be treated as a unity complete in itself. In some form or another the fundamental concept is also contained as a whole in each of the incomplete concepts just mentioned. From this principle of the unity or completeness of the fundamental concept it follows that every operation in which one of the "incomplete concepts" is used must be complemented by the addition of the whole of the fundamental concept. In this way the relative nature of the incomplete concept finds a formal expression. This principle may be formulated in a number of different rules or propositions for use in the process of analysis. These rules or propositions, together with the fundamental concept and the incomplete concepts derived from

it, constitute the whole of the apparatus needed for the Analysis of Structures mentioned above.

Those who are not trained to recognize the scope of the axiomatic method may at first be tempted to doubt whether so restricted a set of axioms is likely to prove of any value. It may be replied that mathematics begins from a far narrower set of concepts, and yet without the help of any extraneous concepts undertakes the construction of the whole vast edifice of the theory of numbers and space. It begins with a small number of primitive ideas, such as negation, implication, disjunction, truth, proposition, and variable; and with a small number of primitive propositions like "Anything implied in a true elementary proposition is true". It is easy to show that all these concepts and propositions lie within the framework of our fundamental concept. In the main they are implied by that pair of incomplete concepts which I described above as Relation and Quantity; and it is found that the main propositions are partial expressions of the principle of the unity of the fundamental concept which we have already discussed.

It is from this apparently narrow system that the whole vast edifice of Mathematics emerges merely through a process by which the structure implicitly contained within the system is elaborated.¹ Accordingly we may also anticipate some success for our own undertaking.

In the first instance the analysis of the structure of the system of axioms is a purely formal process. This much is implied in the nature of the axiomatic method. But it is requisite that the formal process shall result in a perfect "copy" of the relations subsisting between actually existing entities. Consequently it must be capable of interpretation, and the interpretation must admit of verification through experience. In the present instance the interpretation results immediately from the facts which led us to set up the fundamental concept.

In the second division of the first Part—"Analysis"—I demonstrate in detail that the analysis of the Structure of the axiomatic system does in fact suffice for the derivation of the most important guiding concepts of philosophy and of all sciences in general. I prove, in other words, that once their structure is formally developed, interpreted, and verified, much of its significance and of the interconnection between its terms become clear. It is this

¹ Cp., e.g., Whitehead and Russell, *Principia Mathematica*, second edition, Cambridge, 1925-1927.

analysis of structure that leads to the natural order of human thought. The chief of the derivative concepts are Substance (thing and property); Causality (cause and effect); Consciousness (subject and object; ego and non-ego); Continuity (time and space). Thus all of these concepts appear in the system of natural order as relative and secondary concepts; that is, within the sphere of the natural order they are not unanalysable ultimate data; on the contrary, they are Formations that can be analysed and can be reduced to other and simpler concepts.

In these interesting results our own analysis agrees with the results of mathematical and physical study in this respect at least, that these sciences, too, have made it impossible to admit that such concepts as those of substantiality, causality, space or time are primitive, simple, or absolute data.¹ The result may appear meagre at first when compared with the bold constructions reared by mathematics. Nevertheless, the foundations have been laid, and a road has been opened that may lead farther.

The second Part of the work treats in detail the structure of the philosophies that have become important historically. The method is to examine their "standpoint", that is, the axiomatic systems on which they are tacitly based, and to show how these systems fit into the natural fundamental structure of our thought. Through this analysis the importance of the different philosophies and their deeper interconnection is made clear.

It might have been tempting to make use of symbolic expressions in this work, and to cast it in the shape of mathematical formulae, after the manner of the Logicians—a method also adopted in the study of the first principles of mathematics. The principle of the completeness of the fundamental concept can be expressed in a set of logical propositions with the aid of the incomplete concepts that are contained within the prime concept, together with certain other concepts which can be derived from it, such as negation, disjunction, and implication. It is easy to express these propositions in formulae similar to those used in the logistic symbolism. For a number of reasons, however, I have refrained from following this method, and have chosen a more fluid treatment, in spite of the fact that some decades ago I had worked out a symbolic script

¹ Cp. Russell, *Our Knowledge of the External World*, reissued 1924; also Frank, "Was bedeuten die gegenwärtigen physikalischen Theorien für die allgemeine Erkenntislehre?" in vol. 17 (1929) of *Die Naturwissenschaften*, pp. 971 sqq.

suitable for the expression of the fundamental concepts of philosophy and the relations subsisting between them. What is here offered to the reader is a simple and direct description of the structure of the fundamental concepts, in which account is taken of the principles which I have proposed for such a description.

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AIM AND PLAN OF THIS WORK

Belief in a "Natural" Order—Meaning of a "Good" Order—Older Works dealing with Natural Order—Purpose of the Present New Treatment—Its Logical Structure.

Contents: I. The System—Problems, Axioms, Methods—Analysis—Stand-points—Systems. II: World Views.

I HAVE attempted in previous books and papers to point out the way which leads to a universal and comprehensive Ordering of human experience.

Such an Order must be as perfect as possible, and the search for it depends upon the assumption that a natural order exists, that it is manifested in the universe, and that it lies at the back of human experience. We believe in it, for everywhere we see the traces of order; and we are convinced that ultimately the whole of experience can be understood from one single standpoint, since the whole of experience presents us not only with order but also with uniformity. Indeed, order without uniformity is unthinkable.

Although we may never succeed in reaching the one, all-comprehensive formula of natural order, we still entertain the hope that we progressively approach more nearly to this formula if we make it our aim to discover that order which most simply, completely, and comprehensively describes our experience, and throws light upon the common aspects in all connected systems.

If it is asked what use such an order is, it may be replied that like every good order it affords intellectual enjoyment; and if it succeeds in revealing to us in more than usual perfection the ultimate and most universal interconnections subsisting between all that can be the object of experience, it affords us the highest pleasure of which man is capable.

But Order gives us something more than a particularly comprehensive view; it also affords us an essentially deeper insight into the nature and significance of the whole of our world. It gives a firmer hold to thought, and gives to the intellect a point where it may rest; and thus it satisfies a need which is founded upon the very nature of the human mind.

This deeper insight into the ultimate and most universal interconnections also enables us to command more confidently the whole complex of our experience. This in turn gives us more reliable guidance when we attempt to penetrate into more complicated systems.

I succeeded in discovering an Order which afforded vistas of surprising depth and scope, some of the essential details of which I developed in the eighties, and set out in certain preliminary publications. I continued to go further in this way. I found an easy road over long distances, I fixed its point of departure and its direction, I charted the roads which branch out of it, and I gave a more and more definite form to the results of my labours. I summarized them in 1919 in a paper called *Wirklichkeit, Wahrheit und Wissen*, which was supplemented two years later by *Das Vollwirkliche und das Als ob*.

The present work is an attempt to present a general view of the whole of the system. I shall suppress all details which are not essential in such a survey, while elaborating in greater detail the principles, and attempting to render clear the inner laws which govern chains of thought, together with the scope of the latter.

This book, however, offers more than a new presentation of old matter; it offers new points of view with wider horizons, which admit a more rigid structure and a more ample elaboration. I point out new aims and new methods for the history of philosophy as well as for the construction of systems. Finally and chiefly I offer an analysis of the whole complex of our universal concepts, revealing a great part of the composition of this complex and of the fundamentals of human thought.

In the logical structure of this book I have followed the axiomatic method developed by the mathematicians of the last decades. Indeed, this is probably the only method which will ever allow philosophy to be established as an exact and universally valid science. The question of logical structure is even more important for philosophy than it is for mathematics.

I do not, however, confine myself to a thorough investigation of the fundamental question of the logical structure of philosophy as a science; I go further and show the manner in which this structure can be erected. This is a subject of great importance, and accordingly I have attempted to give to my presentation all the lucidity and plainness compatible with a strictly scientific method. In order that the place within the system of each part may clearly appear I have arranged the work in sections and subsections.

In the first part I ask whether there is a natural Order of human experience, and how it is to be carried into practice.

In the first Main Section of this part (The System) I deal with the problem, plan, and structure of a system of natural order in

general. In the second Main Section the system itself is developed. The first section treats in turn problems, axioms, and methods.

Under the heading of Problems I deal in greater detail with the problem of a natural order. I point out the meaning of natural order, and the regions in which its application may first be hoped for. Here I make modern geometry my model (more especially abstract geometry), which starts from the simplest and fewest possible axioms and axiomatic concepts and derives the whole system from them by a process of strict analysis.

Under the heading of Axioms the development of the axiomatic system of natural order is carried out. From out of the mass of human experience it defines one fundamental concept which is perfectly universal and simple. Thereupon it appears immediately that this fundamental concept can be looked at from four main points of view, to denote which we may take the fundamental classification of Logic, calling them Relation, Quality, Quantity, and Modality. The fundamental concept, taken as fundamental Relation, then means reciprocal implication or reciprocity; as fundamental Quality it means determinateness; as fundamental Quantity, unity-multiplicity, and as fundamental modality, Order.

But these four meanings are not four different concepts; they are merely four different dimensions, or four closely allied universal expressions for the same fundamental complex and fundamental concept. It is this concept which comprehends within itself the totality of our experience as a uniform, orderly, and widely differentiated whole, all the members of which are reciprocally interdependent. The immanent connection which subsists between these four manifestations of the fundamental axiom is set out clearly and in detail under the heading of Axioms, and the Fundamental Concept itself is exactly defined. It will appear that the category of fundamental relation is particularly significant. It is the foundation of the whole of the analysis; it is consequently a concept of the greatest universality, and accordingly I have been at the greatest pains to define it clearly and exactly and to leave no element of irrationality in it.

Under Methods I derive from the Fundamental Concept, and more especially from the fundamental relation, three principles which determine the methods to be used in the formal analysis of the Fundamental Concept; further, the rules are set up for the ontological interpretation of the results of the processes of formal analysis.

This gives us the general logical foundation of our structure,

and we proceed next, in the second Main Section of the first Part (Analysis), to undertake a strictly rational analysis of the Fundamental Concept with the help of these methodological principles.

The analytical Part is divided into three chapters, which deal in turn with the pre-individual forms, the individual forms, and the transindividual forms. This leads us step by step to an elaborate system of universal concepts, which at first have a merely formal significance. When they have been completely developed it appears, however, that they agree with the system of the familiar universal concepts of our experience, and that the structure of this system is identical with the structure of human thought. Light is thrown upon such concepts as those of Substance, Continuity, Consciousness, Time, Space, Ego, and Non-ego, Thing, and so forth; and the reciprocal connection which subsists between them becomes clearly apparent.

It is this unaided and immanent development of the fundamental concept which, step by step, and without the admixture of any irrational element, leads us to a profound view of the fundamental questions of scientific philosophy. At no point are we without sure rational guidance, and every concept is of the greatest possible exactness.

There is another advantage, which is that the inner connections are seen more clearly because we stand at a higher point of vantage. We are no longer tied rigorously to one fixed analytical approach. For example, we may substitute for the universal fundamental axiom a narrower modification of it, or a suitable system of such modifications, complete or partial, and may make this the starting-point of the process of analysis. A narrower axiomatic system of this kind I call a standpoint.

Now any chosen standpoint, if it is at all suitable, will serve to give us an analytical insight into this or that part of the natural order. As a result we are presented with a number of particular manifestations of this natural order, and these particular manifestations may on occasion prove very valuable, because they allow us to approach close to the details of this or that sphere of the natural order, and to see it in a clearer light.

We also make the further discovery that the different world-views which have emerged in the course of the history of philosophy are precisely such particular manifestations of the natural order viewed from different standpoints. The conceptual complex of which we have succeeded in unravelling a good part is seen to be none other

than that which lies at the bottom of every rational philosophy, and which every irrational philosopher made the goal of his groping labours. Apart from details the essential distinctions between philosophical systems consist in their respective standpoints, that is, in their axiomatic systems. These in turn almost without exception lie within the limits of Natural Order. Accordingly they can be rationalized in a large measure; they can be compared and their interrelations can be exactly determined.

This means that there is such a thing as relativity as between the various world-views. But it is a rational relativity, and not a feeble renunciation of knowledge. It is a method built upon a firm basis of laws, and its aim is to utilize the intellectual systems of others and to discover the truth in every shape in which it can meet us.

In the second Part this complex of world-views is set out in detail. It is a sort of history of philosophy, but it has a new point of view and leads to novel conclusions. We can survey the whole development in a purer and clear manner than any other method permitted; we penetrate all those variegated and apparently contradictory view-points which tradition offers us, and we see how they fit into our Order when once they are discovered to be either valuable preliminary work, or partial views of a sphere which I have more fully explored myself, or again complements of our own discoveries.

These historical discussions are at any rate a partial fulfilment of the promise I made more than forty years ago, when, in the first of my larger works, I spoke of an intended second part.

The novel and peculiar nature of this treatment compels me to go back to the original sources, and to deal with many subjects in more than customary detail. Accordingly, in order to keep down the dimensions of the work, I have restricted the historical presentation to the capital outlines. My chief aim was to throw light upon the axiomatic foundations of the different thinkers, and, apart from this, upon the driving forces which governed their development. Here the material surroundings and the mentality of the individual thinker are less important than the spirit of an age—a complex of influences which hitherto has met with remarkable neglect. I have dealt especially fully in this sense with the transition from the Middle Ages to the Modern Age, and with the forces which governed the birth of epistemological criticism in the XVIIIth century.

More particularly have I thrown light upon Nicolas of Cusa, Descartes, Kant, Fichte, and Hegel.

Of modern thinkers I have drawn my examples from Hoffding, Rehmke, Driesch, and Vaihinger, and have also added some remarks about the views of the modern critical realists.

BOOK ONE

THE SYSTEM OF NATURAL ORDER



FOUNDATIONS OF THE SYSTEM

1. Problems (Aim of Philosophy. Plan of Procedure)

Order of Experience—The "Best" Order. Natural Order. Its Characteristics. Relativism.

The Question of the Comprehensive Fundamental Concept of Order. The Fulness of Experience—The Yearning of Mind. General Direction—General Characterization of the Significance of the Fundamental Concept.

The Main Sphere of Order: Universals. The Interconnection between these. Their Relation to Particulars—Relation and Determinateness—Roots of Concepts. The Complex of Universals and its Rationalization.

Further Definition of the Task of Philosophy: to Discover the Natural Structure of Human Experience. The Difference between it and Metaphysics.

Plan of Procedure. Fundamental Axioms, Analysis, Interpretation. Rules and Principles.

PHILOSOPHY may be looked at as the attempt to introduce the simplest and best order into the whole of human thought and the whole of our internal and external experience. By experience in the most general sense we mean the sum total of our inner and outer life.

On this view philosophy ceases entirely to have for its task one aim which sometimes it was supposed to have. It is never the end of philosophy to understand anything that wholly escapes human experience, or to reveal anything that is supposed to lie "behind" the world of our experience. It has one task only, and that is to give an orderly description of this world of experience exactly as it is in fact presented to us in the shape of inner and outer experience: now evidently such an aim is, before anything else, a practical aim.

At first the Whole which is to be described appears as a monstrous confusion of determinate terms and of temporal-spatial relations between these terms. Our task in particular is to describe this Whole in an Order so that, by virtue of this Order, it shall satisfy us to the greatest possible degree. We may demand of it that it shall afford us the most immediate and perfect insight and the widest view with the least possible expenditure of time and trouble.

Now it may fairly be assumed that a perfect order is not something arbitrary, and that it does reveal certain inner relations of the Whole; and that it has a certain significance as applied to actuality; in other words, that it is a "natural" order. Of such an

order it may be expected that it shall throw light upon the interconnections and the most general outlines in the multiplicity of our inner and outer experience, and that it shall make use of them in order to determine the direction and the form of the description which it undertakes to make. We ask that it shall set up certain fundamental concepts and ideas which are *priora* to the whole of potential and actual experience, the content of which it is their function to relate, and that it shall show how we may follow their guidance in order to penetrate into the infinite confusion of experience. Hence it follows that the natural order of our experience must at the same time be identical with the fundamental order of our thought and cognition, if indeed such an order exists. ("Theory of Cognition.")

Given a best possible order, we further have a right to expect that all other possible orders, in so far as they are based upon inner relations and not upon external criteria, can be traced back to this best possible order, and that this process will not cause them to be set aside as invalid, but rather will lead to their further extension and better confirmation.

Evidently the idea of a best possible order is at this point a relative concept, and the question whether any given order may be called the best can be decided only by a comparison of this order with others. It might even be imagined that we may reach different conclusions in accordance with the different demands which we make. Thus for the moment the question whether there is an absolutely best order becomes of secondary importance.

The question now is how we can discover the "natural" order. Is there one fundamental concept which comprehends the whole of our experience, or at any rate reveals to us the most fundamental among the reciprocal relations which subsist between the members of the Whole, and if there is such a concept, may we hope ever to grasp it with our finite human spirit?

At every step life meets us in an infinite variety of manifestations. Say that I have been walking through a wood; at length I have reached a high point whence a wide prospect opens before me. Everywhere there is air and light, colour and fragrance. Around me there are hills and valleys, the green wood and the song of birds: everywhere the fulness of life surrounds me in a thousand different forms.

Everywhere there is infinite growth and decay, incessant waxing and waning; and in the midst of it man with his love and his hate, his plotting and planning, and his creative toil. In the heavens the sun moves in the course prescribed by ancient law, and showers blessings; and after he has set, night reveals new marvels. In the stupendous depths of space it shows us new worlds, and hints to us such an abundance of mysteries that all the wealth of the world which we know sinks into nothingness.

Next we learn the secrets which men have wrested from Nature during ages of investigation and curious pondering, and all that has been discovered about the structure of the macrocosm and of that microcosm which our crude senses cannot apprehend without the help of instruments; we learn the laws by which all this Manifold is ordered. Then it dawns upon us how much still remains to be discovered, and perhaps we despair of ever comprehending this fulness of reality within one thought. And yet this is the desire of us all. This is the goal after which all strive who are not of a shallow mind, and if they cannot reach it they try at least to devise some comprehensive thought which will give a fixed point to a mind groping ahead into the infinite.

If now we look more closely to discover the nature of these general guiding concepts which the human mind has formed in the course of time, it will be seen that they all aim approximately in the same direction. This is a fact of some significance. It may prove possible to determine the direction more exactly and to find more certain rules by which it may be pursued. This idea will be taken up again in the second Part of this work. At this point we will attempt to approach our task without paying any particular attention to the historical development of world-philosophies.

What might be the nature of the most universal and comprehensive fundamental thought? How are we to find a road in order to approach it if we start merely from the infinite multiplicity of all that is and becomes, the rough outlines of which we have just indicated?

It is not to be expected that this fundamental idea resembles a kind of mathematical world-formula which would allow us to derive the whole of reality. Much, however, will be gained if we succeed in seizing correctly one perfectly universal and simple characteristic of the Whole. We are then in a position to see how far it will take us, and if it proves to be capable of development it may guide us to further discoveries of universally valid "relations". We shall

find a direction in which we can proceed and a road which will carry us safely.

Our insight will become more profound and our survey wider; and thus, step by step, we may succeed in reaching an understanding of the fundamental outlines of natural order, which in turn will allow us to have a clear view of the fundamental nature of the Whole. Perhaps we may then succeed in following the traces of this order and in reaching more and more complicate relations. But, although thus we shall have advanced a good deal nearer to an understanding of reality in its fulness, in the end we are certain to reach a limit where further progress along the analytical road is barred. At this point the general sense of direction which we have acquired may lead us some distance further, so that gropingly we may enter regions into which we could not penetrate otherwise.

At this point all this is no more than a hope which seems to me to be capable of realization. Accordingly we must attempt to find a road along which we shall be able to pass.

We may assume that the most universal and comprehensive fundamental characteristics of a perfect order are manifested most clearly in the interconnections between Universals; so that the first stage of philosophy might well consist in a theory of the significance and connection between these. ("Theory of Categories.")

By Universals I mean a small group of concepts of the most universal and comprehensive nature. They are familiar to us all, and we would be crippled without them. They are the types which are impressed upon our thought; and in part they have become so rooted in our language that we can hardly express a thought without making use of them. Among them are Being, Consciousness, Ego and Thing, Subject and Object, Substance and Accident, Unity and Multiplicity, Manifoldness, Space and Time, Becoming, Change, Motion, Action, Cause and Effect, Force and Matter, and others.

The sciences without exception take these concepts as given, and do not concern themselves with their inner connection and meaning, so that these concepts are, in a way, the common bond among our fully formulated thoughts, as well as among all the different sciences. Hence it may fairly be expected of philosophy that it shall give a firmer common foundation to the sciences by throwing light upon the connection between and the significance of the universal concepts.

By analysing any sentence which briefly expresses some simple

act of intuition we can learn how great a part is played by these Universals in all our thoughts. As a result of such an analysis we shall be able to point to a considerable number of Universals which either occur in the sentence immediately or else are plainly the more universal and comprehensive prototypes of concepts occurring in it. Thus to a great many propositions the formula "I perceive that something is happening there" may be applied; that is, we perceive that something is undergoing a change of state (position, shape, colour, and so forth). To take a very simple instance: I see a sphere rolling on a plane. Now the sentence in which I express this contains explicitly the terms, Ego, perception, there (space or externality), something (thing), event (state, change, time, becoming); and if the meaning of the assertion is analysed a little further we meet with a further number of universal concepts like consciousness, subject and object, substance and accident, determinateness, space and time, becoming, being and not-being, and the like.

Even a simple analysis of this nature suffices to show that all these universal concepts are closely interconnected and that the fundamental structure of the whole of human thought must find its most immediate expression in their reciprocal relations. Thus presumably it will be a main function of the order which we seek, to throw light upon the fundamental structure of the system of our universal concepts.

But apart from the universal concepts there exists a vast number of narrower and more definite concepts, and we must ask what is the relation of these to the former. Above I called the universal concepts the prototypes of our thought and of our narrower concepts. At this point, this phrase can be no more than a non-rational indication of the direction in which the answer to this question must be sought: a final elucidation of the inter-relation of the universal concepts, and of their relation to the particular concepts, can result only from our fundamental order and its complete analysis. I will anticipate, however, by making a few remarks which may appear immediately evident.

If we analyse one of the more narrow particular concepts and lay bare its roots and branches, we shall invariably find that it is an exceedingly complex structure and that it is intertwined with innumerable other concepts so that they form a knot which it is almost impossible to unravel; accordingly an exhaustive analysis of even one of these concepts may go far beyond human faculties.

If we possess such abstract concepts as beautiful, good, bad, right, and wrong, we may fairly expect that we shall be able to trace the fundamental order in them for some distance. On the other hand, when we come to deal with such concepts as iron, glass, tree, and table we shall meet with so much that is non-rational, and with so many interconnections with innumerable other concepts, that we may despair of making any real approach to them by means of an analysis of their fundamental structure; while we are even less likely to reduce the whole system of relations of which they form a part to one fundamental rational order.

It is true that we are not generally aware of this complexity in our everyday concepts. We never think our thoughts to an end, and we never unfold exhaustively the groups of images with which we operate. For the full concept we substitute a symbol, a word for example, and when we hear it we allow details and relations which happen to be relevant to the particular case to come to life in our consciousness. A complete analysis of such a concept would amount to this, that the whole of a concept with all its detail would be assigned a place within the natural fundamental structure of our thought, a process by means of which its relations to all other concepts would be fully explained. Now this goes beyond our forces. All that we can do is to discover one or another of the many universal relations by virtue of which such a particular concept is rooted in the fundamental order. But general root-concepts of this kind are always common to more than one particular concept, and it is this very fact which renders possible a certain preliminary order. Similarly, in order to cope with the immediate needs of life, human intelligence creates a kind of order by means of rough approximation.

Now those conceptual roots which go deepest are nothing else than such universal concepts as being, thing, substance, space, matter, etc. We may hope that we may succeed in analysing their interconnection, and in establishing an order for these root-concepts if for no others.

The main distinction between the particular and the universal concepts is that the former are more narrow and more closely determined. These qualities are due to the more complicated structure of the system of relations of these particular concepts, and to their closer dependence upon ultimate non-rational terms which do not admit of further resolution. The difficulty of assigning a place within a universal concept of order to the concepts which we are investigating varies with their narrowness and definiteness.

At the same time we shall also find that the universal concepts are far from simple, and in fact are thoroughly complicated structures of relations.

The universal concepts overlap at many points and form a dense labyrinth. It is true that certain of their reciprocal relations can be picked out without lengthy investigation, and can be pursued for some distance. The ordinary thought of every day suffices for this: it succeeds in fashioning a guiding line, adequate for ordinary needs, which will allow it to comprehend the complexities of the universe. But it is the function of a complete and rational order to unravel the whole of the confused mass and to introduce unity into it.

Such an exposition, on the one hand, will ultimately reveal a number of relations which recur everywhere and thus introduce order. On the other hand, it will meet with certain ultimate determinations which cannot be resolved and, themselves non-rational, exist by the side of the rational. Our efforts to reach a perfect order whose aim it is to embrace the sum total of our concepts will always reach a point in the end where its progress from the simple to the more complex is barred, either because to unravel the threads surpasses its powers or because it has to deal with certain ultimate data, e.g. elementary terms like "green", "bitter", "hot". At the outset our exposition will have to be content to accept a good deal that is non-rational: the true ultimate terms will remain non-rational to the end.

In a good Order the amount of the non-rational must be small, since it is the task of such an Order to rationalize as far as possible, that is, to reveal and order every relation and reciprocal connection, and to follow them until the ultimate and irresolvable terms are reached. Philosophical systems are such attempts at order and rationalizing.

The universal concepts are the fundamental forms of our thought, and their importance as such was realized already in the classical ages. From the days of Pythagoras, Plato, and Aristotle to those of Kant, attempts have been made to fix them and to introduce order into them: the attempts were foiled until Fichte and Hegel succeeded in penetrating somewhat deeper into the system, and no profounder efforts have been made since their time, in spite of the mass of writing that has been turned out on the subject of "categories".

We may now ask what we may demand of a philosophical system

of this nature. Its task is to rationalize experience, and to introduce order into it; and by experience we mean the sum total of all that has ever entered our consciousness, that is, of all the facts of consciousness: of all its immediate data and their reciprocal connections, since these are the sole foundation of all our thought and cognition. To introduce order into the whole means to lay bare its natural structure.

Now we all possess a certain order in our experience. We have formed for our own use innumerable concepts and have made them compatible with one another. This is a conceptual system serving the needs of practical life, and it is often called "experience" in a special sense. In order to reach back to its original foundations we must first carefully test this practical system, and, in part, resolve it. We shall then be in a position to begin a new order.

Our work will, then, in the first instance be of a logical nature, and its function will be to give us a full and orderly account of the connections which subsist between the fundamental facts of our consciousness and the conceptual structures which rest upon them. It is to be expected, however, that this logical analysis will never suffice to set us free from the network of interconnections.

We would be certain to go wrong if we were to begin with the intention of discovering the nature of things "in themselves" or their "true essence", or of finding out what lies "behind" appearance, and so forth; that is, if we were to look for a metaphysical system as it was understood in an earlier period. If such an investigation had any meaning at all, then the analysis of the structure of our experience would throw light upon this meaning and would supply us with the foundations for advancing beyond our experience. In fact, however, once we have carried through our analysis to the point where we have found what is the relatively best form of order, the result will be to show us that all questions about "things in themselves" and about that which is alleged to lie beyond experience vanish automatically. We shall find the ultimate reasons of these questions, as well as a satisfactory explanation of our strivings after the transcendental, in the immanent relations of our experience itself.

We have, then, undertaken the search after a fundamental order of our experience which shall approximate as closely as possible to

its natural order, and the first step must be to make some plan of operations.

Here the logical foundation of mathematics is the ideal. Its greatest perfection is to be found in abstract geometry: and, as in geometry, we shall try to find certain axioms, or axiomatic fundamental concepts, and shall then proceed by strictly logical methods. We shall try to make a minimum of axioms suffice. The ideal would be to discover a single axiomatic concept which should embrace the most universal form of relation of all that can be experienced. In order to be absolutely comprehensive such a concept would have to be drawn from the fulness of the whole of experience: accordingly our next aim will be to obtain such a system of axioms, or rather such a fundamental axiom; for short we will call it the prime form.

Having discovered the prime form we must next proceed to lay bare its structure as completely as possible. We can do this only by seeking after all the connections and reciprocal relations which are contained in the prime form. We must further call to mind the different shape which is impressed upon this form in accordance with the different points of interconnection to which we may assign priority, allowing the other characteristics to depend upon them.

This gives us, in the first instance, a purely logical and formalistic analysis of the prime form. It reveals to us a fixed and orderly system of relations and forms of expression. At this point the system is of a formal and abstract nature.

Now the prime form has a meaning with regard to reality, since it is the result of our efforts to find a most universal form for our experience; and experience itself is a kind of reality. Hence all the particular relations which we can derive by formal analysis from the prime form must be related to reality in some way. It must be possible to interpret them, and it is this fact which makes it possible for formal analysis usefully to assist cognition.

To enable ourselves to proceed to the analysis of the prime form we must look for certain principles capable of affording us a sure guidance in the work of transformation. These principles must not be arbitrary, but must be clearly implicit in the prime form: the result of their connection with the prime form will be that they form one coherent system.

We shall be able to set up certain rules for the interpretation of the formal, analytical system. Unlike the principles of analysis,

which are drawn from the prime form, the rules of interpretation will be drawn from experience, and the process of interpretation will depend essentially upon the peculiar nature of the connections which served as the principle by means of which we derived the prime form out of experience.

This will, then, be our plan of procedure. We begin by looking for the prime form (theory of axioms), we then find the rules for discovering the fundamental structure, and the rules of interpretation (theory of method), and having thus reached the more general part of the work (which deals with the System as such) we turn to the analysis of structure proper and its interpretation (under the heading of Analysis).

2. Axioms (The Propædæutic System)

Significance of the System: Preliminary Sifting of Experience—Training the Mind to Seize Fundamental Relations—Preliminary Order—Selection of the Order-Concept.

The first step in order to reach an axiomatic fundamental concept for our experience will be to sift and order as best we may the sum of our experience. The manner of doing it should be of such a kind as to train the mind to seize those fundamental relations, which, perfectly simple and universal, recur and penetrate everywhere.

We have already defined experience as the sum total of all that is presented to us under the appearance of reality: as the totality of data, events, and relations. In the first instance it is an exceedingly complex structure of determinate terms which are reciprocally related, and it is our endeavour to find the fundamental outlines of the structure, without asking what lies behind it. We begin from that which appears to be given immediately, which we may call the *surface* of actuality, and we attempt to pursue the natural threads of relation until they shall allow us to embrace the *full* actuality of our experience. It is not intended that this preliminary survey shall tie us down in any one direction, either with regard to definitions or Order: what is intended is that it shall facilitate the discovery of the most comprehensive possible concept, which is implied in the whole of our experience, and to which we can assign the position of fundamental axiom.

At the same time we must keep to a certain preliminary order

even in this first description. The description in this preliminary order we will call for short the propædæutic system. This system does not anticipate any part of the fundamental order, which, once we have found and cleared up the fundamental concept, will be pursued in a wholly different manner.

While it is true that the preliminary order cannot bind us, it is also true that all orders will not be equally suitable for our purpose. The obvious plan might appear to consist in applying to the whole of experience the everyday distinction, which gives us two groups, the relation between which has hitherto been a main occupation of philosophy. We find an ego and a multiplicity of things; or again an ego and a non-ego. Within ourselves we find sensations; outside we find things existing in space and time.

The distinction might, however, prove an obstacle, or might involve us in difficult side-issues. Things are not given in the same manner in which states of consciousness are given: the fact is that there is an obvious interdependence between them. We do not apprehend things immediately, but only by means of sense-perceptions, which provide us with "sensations". Thus, if we began by looking at things as something standing in opposition to the ego, we should immediately be faced by the problem of things in themselves, and we might begin to turn in a narrow circle from which it might be difficult to escape.

It might be thought that the best way to escape from these problems would be to look in ourselves for the centre around which to order the totality of our experience. In that case we would start from consciousness, or the ego, since this seems to be the prior term in the relation between self and thing. But this might lead us into even worse perplexities; and besides the whole of human perception has so profound and fundamental a relation to the external world that we are compelled to rate the Outer as of equal importance with the Inner: there being at least a suspicion that we are obstructing our view if, in our propædæutic system, we begin by placing the centre of gravity of our study within the ego.

Accordingly we select a different preliminary Order, which leaves us rather more freedom.

First Part.—The Sifting of Experience

The Three Stages of Order.

First Stage: Static Description—Fundamental Form: Space—Geometry, Arithmetic; Matter, Substance, Existence.

Second Stage: Dynamic Description—Fundamental Form: Time—Becoming, Causality, Force; Mechanism, Laws of Nature—Law of Reciprocity.

Third Stage: Psychical Description—Fundamental Form: "Knowledge"—Subject-Object. "Experience"—Ego-non-Ego, Thought.

Summary.

We may start from three different points of view, each of which will lead us in a different direction and into a different world. Each one of these is built up on the one which precedes it, so that in the end we have a Whole consisting of three stages, which, however, are not equivalent or interchangeable like the three dimensions of space. The fact is that each is a distinct form or stage of intuition, presupposing the preceding form, and developing it into a totality of a higher kind. We might describe them by means of three expressive, if not wholly exhaustive, epithets, calling them respectively the static, the dynamic, and the psychic form of intuition.

In the following pages I confine myself to a general outline of such a form, the detailed elaboration of which, after the hints which have been given, is not likely to prove difficult.

First Stage.—We ask: What is there? This question demands for answer a perfectly simple enumeration of all that is given to our senses. All these data are to be described as we find them, and we are not required to begin by looking for any common characteristics which they manifest. Accordingly all that we would have to do would be to collect all sensuously perceptible characteristics with which we already are or still can become acquainted in the organic or inorganic objects that lie within our reach. Their form and order is the most important matter, but their other qualities too would be relevant in so far as they are immediately manifested in the sensuously perceptible nature of things, and in their spatial form and arrangement. We do not pay any attention as yet to the changes which may be brought about in them by various possible influences from without.

Our description is thus materially limited; but even so the enumeration is likely to lead to infinity. It will be rendered easier if we collect similar entities into groups and lay particular emphasis upon the common characteristic of each group; in other words, if we apply methods of arrangement and of the formation of concepts.

In this way we shall soon reach certain characteristics which are common to all the data which are offered to us. We shall ultimately find, on the one hand, a small group of particular determinations, like colour, taste, and smell, and others which can be perceived by the senses, which, so to speak, constitute the stuff out of which our experience is put together; on the other hand, we shall find one comprehensive form in which all entities are related, and in which every process of formation and arrangement takes place; this is Space.

In itself the form of space is three-dimensional extension. It is a threefold infinity, in the functional and not in the ordinal sense. This infinity is external as well as internal, since, on the one hand, every part of it which lies between any two points is infinitely divisible, and since, on the other, it can be continued infinitely in any direction. At the same time, space is a unity. The whole of space is one and the same, and we cannot imagine any thing or any other space existing outside it, or any of its parts existing separately from it. It is this that we mean by the unity of spatial co-existence or spatial order. This order is a uniform fundamental form, and to it we assign the first place among the forms of order to be used in our propædæutic description of the fullness of reality.

At this point we will not ask what are the data which this form of order manifests to us, or what is the best possible order in which the whole of the material might be manifested. What is important is that we have assigned to space the first place among the various comprehensive forms of order. At a later point we will resume the thread of this argument.

The following are the main characteristics of the general view which we shall reach at the first stage of order. We form concepts and set up an order within the category of space. This leads us to the fundamental notions of geometry. Now in the space of experience we invariably find unity and multiplicity together: this gives us number and arithmetic. Proceeding further we come to the general concepts of matter, substance, and existence, although a full comprehension of these concepts is reached only at a later stage. At this point we are discovering only their main characteristics.

Second Stage.—The question here is: What becomes? and the answer to this question would consist in a survey of all that happens in the world. The form under which this happens is Time: in our description of the fulness of reality it is the second form of order.

Time, like space, has continuous extension, but whereas this extension is three-dimensional in space, it has one dimension only in time. This extension goes to infinity, like that of space, and does so in two ways: it can be both continued and divided to infinity. But this infinity is single: there is only one time, and everything that exists (that is, the whole of the content of the "first dimension", or of space) is unequivocally related to it. This relation between space and time also effects a relation between the various entities which exist in space. Consequently there corresponds to the exact unity of spatial order an equally exact temporal order.

Taken by itself, time is a mere abstract form, and in practice we are acquainted with it only as co-existing with space. For example, we might imagine it as realized in movement, where it presupposes a comparison between two different positions in space. But it is also possible to imagine it realized without movement in the shape of a continuous change taking place in the perceptibilia which constitute the content of the abstract form of space.

At the first stage we found certain universal concepts which were connected with the form of space; these we now proceed to develop further at the second stage. But beyond this we reach new concepts, which are very closely related to the first group, such as Change, Causality, Force, and variable accidentia.

The first stage took us to geometry and arithmetic: at the second the interconnection between the form of space and that of time gives us certain "laws"—those of mechanics and of nature. Of these the most universal and most abstract is the law of reciprocity, which may be formulated thus: "The state of every point in the universe depends upon the totality of the states of all the remaining points in the universe." The fundamental law of mechanics (the law of action and reaction) is a rather narrower law, while the most definite and at the same time most comprehensive law would be a "world-formula" giving a mathematical presentation of every event of the past and future. This we shall never be able to reach. It would exhaust the fulness of reality, at least in so far as reality is comprehended by the two first stages of order, the spatial and the temporal. But reality has a third order, which it has not yet proved possible to approach mathematically.

Third Stage.—Besides the spatial and the temporal form our experience has a third and more comprehensive one, that of knowledge or consciousness. (As a matter of practice, experience is always knowledge.) This knowledge is a form of order in very much the

same sense as space and time, a similarity which has not often been noted hitherto.

This third form has a subjective and an objective side which are inextricably bound together: they can exist only together, and one by virtue of the other. It is true that habitually we look upon the objective element (the content of experience) as something independent, and, in a certain sense, absolute. But this is wrong, and the objective element or content of experience is simply something that is known by a subject: it belongs to the subject, which is its complementary term. The fulness of reality is constituted by the two together, subject and object, forming an indivisible unity, and it is only in this composite term that the third form of order can be discovered.

We need not concern ourselves at this point with the question whether the objective and the subjective, or some third entity standing behind them in some sense, can possibly be looked upon as existing for themselves and in a state of complete separation, for the separated terms would not in any case have anything to do with "experience". In our experience the relation which connects the subjective with the objective is such that they are related as converse to obverse. Unless I am to depart altogether from my experience I can no more separate the green which I predicate of a tree from the green which I experience as a sensation, than I can separate one side of a geometrical plane from the other, since the two coincide and are one. Things which lie altogether outside our experience do not concern us here.

If there were such things lying outside any possible experience it is not easy to see how we could ever reach them. However that may be, if we can penetrate at all to the independent objects, we can do so only by means of that fundamental relation which we call knowledge. Consequently this relation must always be treated as a *prius*; it stands in front of anything that we can possibly reach.

At a later point we shall see that any stimulus which should urge us to look for a "something" standing behind our experience is completely lost, for an exhaustive analysis of our experience is sufficient to bring about a satisfactory solution of these doubts, revealing all those relations which cause us to raise any questions about that which is alleged to lie beyond our experience. As a result further questions of this kind become meaningless.

At this point such questions are irrelevant if only because our

purpose here is simply to describe experience, and of our experience it is certainly true that the act of experiencing plays a part in it. And further, this act is plainly a particular form of knowledge; and this in turn is a third fundamental form, which we must not overlook unless we are to miss the road altogether.

The most general form of this experience, or more generally of knowledge, has already been described in somewhat greater detail above: this form, if we are to employ an expression which really is somewhat too narrow, is "subject-objectivity".—We will begin by taking it in its supra-individual form, in which subject and object are equally valid aspects of one unity. Our previous discussions will lead us to suspect that this form can be taken in a more general manner than this preliminary view. However, at this point it is not essential to penetrate to the ultimate possible generalization, and it is enough to give an account of the existence of the form of knowledge and of experience, and of their chief characteristic.

Accordingly, having asked What is? and What becomes? we may add to these a third question: What is it that we find in the form of knowing-known?

The fundamental form of the second order (the temporal form) comprehended the entire content of the first (the spatial form), and similarly the fundamental form of the third order, to which we have now won an approach, comprehends the other two in their entirety. The spatial form gave us the world of mathematics. The temporal form, in conjunction with the spatial form, gave us a wholly different world—namely, that of mechanics and the natural sciences; and now the form of knowledge or consciousness in its conjunction with the spatial-temporal form leads us in an entirely new direction, which is as different from the first two as these were different from each other. It opens a fresh world for us and gives us a new and deeper insight; it comprehends the whole of human experience, and consequently it is the ultimate one among the fundamental forms, beyond which there are no others.

At each one of the first two stages we found certain rudimentary concepts, which, at this third stage, are rendered more profound and complete. Apart from this we acquire such new universal concepts as Ego-non-Ego, Subject-Object, Thought, and so forth.

This then, is the vertical structure of the three stages of order. To each stage there corresponds its peculiar form of apprehension,

and each member of the triad of fundamental forms embraces in a peculiar manner those which went before.

The first stage offers to our consideration a naïve description of nature, as well as the whole of geometry and algebra. The results of the second stage correspond roughly to the aims of the modern natural sciences and mechanics. The fresh elements offered at the third stage, however, are psychology and a comprehensive view of the world somewhat resembling that which is the supreme aim of the Philosophy of Identity.

No argument will be needed to persuade us that there must be some connection between the three fundamental forms which correspond to these three stages. I shall briefly deal with this connection below; until I do so it will suffice that we have separately fixed each one of these three forms. My intention was to draw the rough outlines of the considerations which were intended to constitute the first part of a propædæutic system: the profounder connection between the three fundamental forms will emerge more plainly in the analytical section.

Second Part.—Discussion of the Results

The Prime Form as Pure Form of Relation—Relation between the Three Fundamental Forms—Common Characteristics—Separation.

"Space"—Limit—Position—Element of Space.

"Time"—Limit, Unity, Reality—Opposition. Being and Not-Being. Becoming. Structure of the Continuum.

"Knowledge"—Subject-Object.

Comparison between the Structures of the Three Forms—The Primary Form of Relation.

The second part of the propædæutic system should deal with the results of the first part. I proceed to give the idea which underlies it.

In the first part of the propædæutic system we passed through the whole range of human experience in three stages, and in doing so we undertook a threefold synthesis of reality in its plenitude. During this process we found three fundamental or guiding forms, and were unable to discover a fourth form of equal validity with these three. Accordingly the enumeration appears to be exhaustive. Further, the three forms clearly are closely connected. We are not acquainted with them save in this state of reciprocal connection, and we can separate them only in imagination. They are built up upon one another in such a manner that each subsequent member

wholly penetrates those which precede. Hence we suspect that they are closely related and have a common origin.

In looking for this origin we shall not allow ourselves to be tempted to search for something outside and prior to our experience. This would be contrary to our purpose, and we confine ourselves to asking, What is the nature of the inner connection between the three fundamental forms of our experience? or, narrowing the question, What are the common characteristics of the three forms, and what is their differentia?

We feel dimly that there must be some primitive form which is the common foundation of all the three; and indeed it is not difficult to find a common characteristic. Each of them denotes some kind of separate co-existence. The meaning of this term need not here be made the object of an exhaustive logical analysis. At a later stage we shall be able to approach it from another side: at this point we have an immediate intuition of this separation. It implies that such concepts as *between*, *hither*, and *farther* may properly be used. In the concepts of limit and severance the whole complex of these notions is summed up particularly clearly.

That kind of separate co-existence which we call space implies that a multiplicity of limits can be drawn in three different ways. Everywhere in space we can imagine a plane which divides space into two parts which determine and exclude each other and have nothing in common except the plane. We can imagine the plane as a pure and abstract geometrical term. Now such a plane has two sides, which, however, it is impossible to imagine as distinct from each other: the two sides coincide, since a geometrical plane has no volume; consequently there is no distance between the sides. But at the same time the two sides denote the distinction between the hither and the far side, or, if, we may introduce particular forms, that between concave and convex, or between inside and outside. The plane divides the whole of space into two parts which reciprocally determine and complement each other. But at the same time the two parts coalesce again within the plane, since it effects no change whatever in the relation subsisting between the different parts of space: the severance does not render the parts of space independent of each other, like the two parts of an apple which has been cut in two.

Within a plane it is possible to fix upon a straight line having two sides which are opposed to each other, determine each other, and at the same time absolutely coincide with each other. The line

separates two parts of the plane which determine each other and at the same time, although separated, coalesce into one in the straight line, since the straight line has no surface and the reciprocal relations between the parts of the surface remain unchanged. Similar assertions may be made of the *point* treated as limit of the *straight line*. In each instance such a limit has a meaning only by virtue of its two opposite sides and of its relation to the two complementary and reciprocally determinant parts which make up a structure of a higher order. By itself and without this relation of two parts of space which are opposed to each other in this relation a plane would be a perfect nothing. Similarly, a straight line or a point is nothing apart from the reciprocal relation between two parts of a plane, or of a line, which determine each other.

The space of experience contains an infinite number of limits. Potentially such limits may be drawn everywhere in space, and wherever they occur the unity of space is severed into two opposites which reciprocally determine each other. At bottom, this is exactly equivalent to the fact of separate coexistence, or of extension, and it might even be said that this characteristic, although not exhaustive, is the most essential and universal element in a definition of space. A more complete definition will be reached at a later point.

It should further be pointed out that the reciprocal determination of the two sides of a limit is, in the last analysis, the foundation upon which is based the relativity of position in space. There is no absolute position, no position "in itself". In order that the position of a point shall be determined, at least one other point is required, and that which we call position is simply a relation between these two points. This one relation suffices to determine the position of the first point relatively to the second, and, in exactly the same manner, that of the second relatively to the first. To determine one position is to determine two reciprocally determinant positions.

This fundamental characteristic of the structure of space will emerge even more clearly if we advance in mathematics to the point where the concept of a spatial "element", or differential, is formed. The latter is sometimes considered as a spatial ultimate, but it might be more apt to look upon it as the representation in terms of abstract analytical geometry of that process of positing limits in space which means a cleavage into opposites. By itself the differential is a perfect unity, and yet it contains a state of separa-

tion within itself. It is a point, and it is more than a point: it has a value as a term in a relation, whereas a pure point would be an absolute nonentity. Consequently calculation is possible with such differentials, since, in certain circumstances, the relative value between two differentials may be stated if we are acquainted with the law in accordance with which the differentials depend upon one another. Relative values, of course, can be quite independent of the numerical value of numbers which stand in a relation to one another.

We must now leave these questions, and must rest satisfied with the outlines of the fundamental notion which we have sketched.

In Time we find a similar kind of separate coexistence and a similar opposition. The latter is a characteristic as essential for time as it is for space; but, whereas in space it is manifested at innumerable different points in the same manner, and can be imagined as being manifested at any point whatever, it is, in time, actually given at one point only. The present is the one point of time which is actually real, and is the most striking limit between hither and beyond (past and future). It determines and severs these opposites and at the same time it unites them, so that they reciprocally limit and determine each other.

The peculiar manner in which this opposition is manifested brings it about that in time the unity of the opposites is emphasized in a way which does not apply to space. It is true that we might imagine a temporal series which might be compared to a straight line in space. Taking such a series as a whole we might imagine some point of which we might be able to predicate much the same as of a straight line in space. However, within the temporal series there is one salient limiting point, and this one point constitutes the sum total of the actuality of time. This one point of actuality is the present, which severs the past from the future, both of which are expressly apprehended as non-existent.

The point of the present does not only emphasize in the strongest manner the unity within the opposition: it also lays the greatest stress upon the opposition itself. There is here not only a gap between past and future, there is another and a far more pointed opposition—that between existence and non-existence. It is this opposition which allows us to speak of *becoming*, and gives to the point of the present its ever-shifting appearance; whereas the

constituent elements of space appear to co-exist in a state of rest.

It is this peculiarity of time which brings it about that that which is, is also at the same time always perishing. In a single indivisible moment it is and has been: in Becoming, Being and Not-being coalesce into one, and it is this kind of coherence alone to which we give the name of time.

Thus the form of opposition in unity, which was the foundation already of the first stage, has become much more acute at the second stage of human experience. And indeed the structure of continuity manifests itself to us most immediately and simply in the shape of time. Time is apprehended immediately at one single limiting point: the present; and it has one dimension only, that is, only one kind of limitation and of protraction. However, the extension of time beyond the limit is not given to us immediately in the way in which a straight line is given in space: it is manifested in one element only—namely, the present, which is the sole point made actual at any moment. Recollection is required in order that we shall be able to construe a series of past moments, each member of which appears to have approximately the same validity as the others, since memory can pass through them all equally at will.

The form of time embraces that of space, for the total actuality of space is comprehended within the temporal present. Similarly the third fundamental form of our experience, knowledge, embraces the other two forms. In itself, however, knowledge is no more than yet another manifestation of the same fundamental form which was apprehended already in space and time: it, too, is a kind of separate coexistence, and of the three it is the most immediate and thorough: the cleavage into opposites of the single identity is manifested in its greatest purity and perfection in knowledge.

In knowledge, or consciousness, we experience immediately and permanently an interplay of opposites; of Thought and its object, and of Ego and Non-ego, which, while they exclude each other as opposites, yet constitute a single identity in which each postulates the other. To the green of the tree as object of my imagination there corresponds my sensation of green, and these two, the objective and the subjective green, are in fact one unity. The single fact of green is thus divided into two opposite terms; into inner and outer, subject and object. The whole of thought is exhausted in the content, that is, in the objects of thought; but, on the other hand, no object

of our thought, or consciousness, has an existence save as modification of thought, or (if we prefer to say so) of self, or consciousness. The two sides possess the same standard of reality, exclude each other, and at the same time collapse into identity, and it is precisely this reciprocal relation which is the essence of the category of knowledge. Accordingly it is here that the form of unity in opposition is manifested most clearly and immediately.

At each point we find the same fundamental form—namely, separate coexistence, or, to give it its more emphatic description, opposition in unity; the only difference lay in the manifestation.

In space we discovered a multiplicity of what we call for short points of reality, all of them having the same validity, in which the fundamental form manifested itself. In actual space innumerable limits exist, and in abstract space, although no limits exist, limits might exist potentially at every point.

In recollection time appears to us as a continuous succession of points of time, so that it is possible to speak of an extension, or single dimension, of time. Of all the points of time, all except one are non-real, while this one, which sums up in itself the whole reality, lays a strong emphasis upon the unity and the limit. Time has only one single point of reality, and the cleavage into two directions which this point contains points into the void—into the past which is no longer and into the future which is not yet.

In knowledge, on the other hand, we find that the two sides as points of reality are equally emphasized. This form differs, however, from the others in that it does not extend directly or indirectly towards further points of reality of the same class: in itself the form of knowledge is without dimensions. It might be possible to arrive by formal methods at a multiplicity of permanently interconnected individuals, which might be held to represent a kind of super-individual extension (or dimension) of the form of knowledge: but such an extension could not be approached by human thought immediately, and could be approached indirectly only through the intermediate form of a supra-individual and more general manifestation of the fundamental form. However, we need not here inquire whether such an approach is possible.

I propose to develop this comparison between the three fundamental forms a little further, as it is not likely that there will be any occasion to revert to them. What I am about to say will not

be binding upon us, nor will it have any influence upon the course of our exposition.

In each of the three forms there is a twofold direction, leading us from the limit in two opposite senses, to *this* side and to the *far* side (as we might call it), or to the inner and to the outer. Thus the two directions are opposite, and at the same time each postulates the other and is the necessary condition of the other. This much is common to all the three forms, but the manner in which the limits and the directions are related to reality is different in each of them.

In space no one direction is eminent more than any other: the emphasis rests upon the limits, whence result the two simultaneous directions, each having the same validity as the other. The number of limits which might in fact be realized is indefinite.

In time, on the other hand, one direction and one limit only is actually realized, namely, the present moment and the direction which stretches thence into the future: it is this direction alone which corresponds with the actual efflux of time.

Finally, in knowledge, not the limit but its projection into the two opposite directions is emphasized. There is a clear distinction between these directions, and their realization depends upon the sharp opposition which subsists between them. We have, on the one hand, the direction which leads from the Ego to the Non-ego, corresponding to intellectual apprehension, and we have, on the other hand, the direction from the Non-ego to the Ego, which corresponds to the passive absorption of "impressions" from without. We may describe space as static, time as flowing, and knowledge as oscillating.

These are the chief distinctions between the three forms of order. The same prime form, which may be described as the cleavage of the unity into opposites, or conversely as the unity of opposites, is common to them all. Space, time, and knowledge are three manifestations of this prime form. In space this form is quite unemphasized (indifference); in time it is the unity (the present moment)

Fundamental Form.			Space.	Time.	Knowledge.
Number of dimensions	..	..	3	I	0
Number of points	∞	I	$\pm \frac{1}{2}$
Number of directions	..	..	0	I	2
Special manifestation	..	..	Indifference	Unity	Cleavage
General characteristic	..	..	Static	Flowing	Oscillating

which is most intensely pronounced; and in knowledge it is the cleavage into opposites.

All the above is recapitulated in the table shown on previous page. The limits are briefly described as *point*. In knowledge the limit is thus manifested only in its twofold projection in opposite directions, and I have ventured to express this by means of the symbol $\pm \frac{1}{2}$ which, of course, must not be taken in an arithmetical sense.

I do not think that this tabular representation is altogether trivial, and I go so far as to assume that it is founded upon some inner and necessary connection. In any case we are here concerned merely to obtain a clear view of the prime form which is immanent, in each member of our triad of fundamental forms, in a different manifestation, viz. the form of opposition in unity. This is the dominant form of relation.

Now that we have apprehended this fundamental form of relation it remains to be seen whether it is possible to exploit it. Before we do so, however, one complement remains to be added.

Third Part.—The Prime Form in its Universal Manifestation

Determinateness and Relation—General Characteristics—Ultimate Terms as the Most Perfectly Individual Entities—Relations as the Universal—Comparability and Describability of Relations—Concepts as Structures of Relations—Rationalization of Experience—Comparison: the Surface of Realities and the Central Point of Relation—Indirect Manifestation of the Relationship between Determinateness and Relation.

Relation between the Ultimate Term and the Prime Form of Relation—The Ultimate Term as the One in the "Opposition", and as Reality—Things—Ultimate Term as Multiple Determination—Unity-Multiplicity—Unity-Plurality—Stages and Orders.

The Prime Form—General Observation about the Meaning of Opposition—Danger of Misinterpretations.

In our previous description the Prime Form was treated simply as a form of relation. Now relations cannot appear alone; they can subsist only together with determinations or "ultimate terms", such as we met at every point of our preliminary sifting of experience. These in turn cannot be severed from the forms of relation.

Clearly the connection between ultimate terms and relations is something exceedingly primitive: it is a characteristic of the manner

in which our experience and our concepts are formed. It may therefore be supposed that this connection will lead us to a completion of the prime form of relation, so that this form will be fully manifested only when this completion has been effected. In order to make certain of this we will now turn to this connection.

In all the data of reality we always find ultimate terms and relations in the closest connection, and in fact the connection is indissoluble: it can be severed only if we establish a logical distinction.

We shall never succeed completely in imagining ultimate terms and relations as severed from one another. The problem involved, however, we understand, and we have the power to approach as close as we like to its solution. That which is given us in the ultimate terms is absolutely different from what we call relations, and these two classes of entities are, so to speak, two distinct roots of our experience. Examples of ultimate terms are *green*, *bitter*, *warm*, etc., where we must try to imagine *green*, etc., as entirely disconnected from that which we call relations. By relations, on the other hand, we mean the link between all these ultimate terms, viz. forms, connections, and in short all that constitutes a *structure*.

The more abstract the manner in which we apprehend the ultimate terms, the more clearly do they appear as the atomic and structureless units which build up our empirical world.—The more abstractly we apprehend the relations, the more clearly do we see in them a structure which is exceedingly complex while at the same time it is plainly subject to laws. We are introduced into the region of simple relations by such concepts as great and small, within and without, before and after, straight and crooked. We shall find, however, that even these relations without exception are very complex. The form of opposition appears even here, and indeed it appears more clearly as the forms of relation are more simple and primitive. For example, the two terms unity and multiplicity constitute a perfectly simple and fundamental relation which will serve to embrace all ultimate terms whatever. This fundamental relation is a datum which depends upon the fact that in the empirical Whole there is given us a multiplicity of ultimate terms, and this multiplicity is a single whole, since every ultimate term is firmly connected with every other by means of reciprocal relations. Clearly the form of unity and multiplicity is primitive and at the same time contains a sharp opposition. More complex forms of relation are dependent upon it, like *Variety* and *Manifoldness*.

The ultimate terms constitute the infinite manifold of our experience: they constitute that element in it which is wholly indefinable and indescribable, immediately given, actual, individual, and real. They are the actual *green* or *red*, the *bitter* or *sour*, *hot* or *cold* of perception: in short, they are the units of the structure of our experience. We are well acquainted with them, but we cannot describe them; we can use words to denote them but we cannot convey them to another person. All that we can do is to refer another person to them, and in doing so we presuppose that he is already acquainted with a sensation similar to ours, and that he uses the same word to describe it.

In practical life such an assumption is, in fact, made. We assume that in similar circumstances similar sensations arise in another person, and this assumption is the basis of communication between men. But it can never be demonstrated to be correct; it is a kind of working hypothesis which proves adequate, but its nature is such that its validity can never be put to the proof. The fact that different men act and behave in a similar manner is no evidence.

To take an example: I may be walking across country with a friend; I discourse about the brightness of the sun, the rich green of the meadow, and the warm and fragrant spring air. The terms in which I express myself, and my general mood, in so far as these are manifested in external behaviour, evidently agree with his. In spite of this, however, how can I know whether his consciousness contains the same sensations as mine? All that is certain is that even if we differed the whole of the conversation with my friend would take exactly the same course as it does when our sensations are the same and when we both alike have the sensation of *green*, *warm*, and *fragrant*. Each of us might have his own world, a world differing in every one of its ultimate terms from that of the other, but nevertheless resulting, from the reciprocal relation between the terms, in exactly the same image. Thus we see that the relations determine our behaviour, while the terms seem to be no more than means used in order to present the relations.

We shall never become directly acquainted with the content of another person's consciousness. It may be possible at some future time to discover some new instrument which will admit us to the greater part of the private world of another's consciousness; but it will remain for ever impossible to find an answer to the question whether this consciousness is of the same nature as ours, not only in its general relations, but also in its actual ultimate terms. Our

relation to another person can never be so close as to allow us to share the totality of his experience, for in that case our consciousness would have to be altogether merged with his, while at the same time the distinction between us as two different individuals, one of whom can enter into a relation of comparison with the other, would still have to subsist. The inner ultimate terms of our consciousness are absolutely individual and private. Relations, on the other hand, are common to all, and hence they recur a thousand times and lie open to all alike. Separate terms are united and held together by them, and in this respect they stand above the individual. They are the foundation of such expressions as form, order, and connection.

The ultimate terms which are immediately given to us empirically are, in the main, our elementary sensations. If these stood side by side without any relation whatever between them, then each elementary sensation would be an elementary world by itself having no connection with any other. It is the structure of relations which binds them into one whole and gives them an order.

This also is the reason why there is not strictly any concept of these real and indefinable elementary sensations. The ultimate term which is given immediately to us in experience and faces us as a simple datum cannot be discussed, described, or incorporated in an order once every relation is abstracted from it. In a certain sense it is an absolute term. Every attempt to describe it ends in a discovery of the relations which connect it with other ultimate terms: these constitute the only, albeit indirect, approach to it.

The ultimate terms, then, are individual and elementary: they are the units of a structure and therefore cannot be analysed any further, nor can they be described or ordered. The relations, on the other hand, can be described. A relation is the peculiar manner in which a number of terms co-exist. The ultimate term is an independent unit, whereas a relation demands at least two directions, or sides, or points, from which it may be attacked.

Thus even the simplest and most primitive relation contains the germ of a progress beyond the individual—a progress which permits of a view from more than one side and a process of comparison. Further, the relations are characterized by a certain independence which persists even when the actual given terms in a complex are replaced by others; in other words, they can recur in the same sense in different regions within the empirical whole. Hence it is possible to make generalizations about relations. In a sense they

are independent of the empirical ultimate terms, and indeed this is the reason which allows us to make a mental distinction between the relations and the terms, although in reality they cannot occur separately. We are in contact with other persons by virtue of the relations which are the common property of all. They can be arranged in different stages and orders, and we can convey them to others.

These qualities of the relations allow us to form concepts about them. Every concept is simply a more or less complex structure of relations.

The whole so-called process of rationalization is in the end simply a discovery of relations, and a comparison of these with other relations. The ultimate terms, on the other hand, resist analysis, and these are the proper element of the non-rational, which will never be anything but non-rational. We can penetrate into the temporal sequence or the spatial juxtaposition of these terms, or into any other connections which subsist between them—that is, into the relations between them; but once the process of disentangling the relations has reached the elementary data the way of rationalization is stopped.

In theory it might be possible that, however far we carried the discovery of relations and connections, we might never actually penetrate to these ultimate atomic elements. This, however, does not alter the fact that it is impossible to imagine relations subsisting alone without any actual terms. An inner compulsion forces our thought to imagine full reality simply as a datum, determined in such and such a manner, which rational processes cannot analyse beyond a certain limit.

Living reality cannot exist without the ultimate terms: and these are also the very source of every relation. On the other hand, it is equally impossible to imagine the ultimate terms as existing by themselves alone; we must needs imagine terms as bound into a structure by means of the relations which subsist between them: terms and relations are, so to speak, two dimensions of experience. If we adopt the terminology of the theory of categories the latter will correspond to the Kantian Relation and the former to Quality. In *Das Vollwirkliche und das Als Ob* I have compared experience with a sphere. The surface of the sphere would be the sum total of determinate entities: I call this the surface of realities. From each point of this surface a thread of relations forms a structure at right angles to this surface and in another dimension. Now, each of these

threads leads to the centre of the sphere, and consequently each point of the surface is connected in this manner with every other. This is no more than a metaphor, but it can be developed a good way before it fails.

The problem implicit in the connection between terms and relations has occupied thinkers from the earliest times. It was formulated differently according to the different angles from which it was examined, and the different points of view from which it was judged. The problem exists almost everywhere where a distinction is made between two sides of human apprehension. Thus, for example, it may well be asserted that the ultimate term is the *absolute*, and the relation the *relative*. But the same contrast is also found in the distinction between concrete and abstract, between unique and universal (as by Rehmke), and between concept and reality, and even in such distinctions as that between substance and accident and matter and form (or idea), and, finally, in the Kantian distinction between sensuous intuition and concept. In each one of these particular notions, however, other ideas play a part, as will appear more clearly in the further course of this work.

For the general class of relations we have already found a prime form of relation, and the question must now be answered, how the ultimate term is related to this prime form of relation.

The ultimate term is the entity which stands between the two opposed sides; it is, so to speak, the point from which the two opposed directions radiate; it is the limit in which they are at once severed and united. For example, the ultimate term can play the part of "limit"—the position of which in space is contingent—effecting the severance between inner and outer, and this side and that; or it may exist in the present moment, which is divided into past and future, and simultaneously unites and severs being and not-being, or, again, a certain datum and that which arises in its place. Further, we have an ultimate term in a sensation which happens to be given contingently, and in which the opposition between subject and object and Ego and Non-ego is refracted. In short, the ultimate term is the given unit in which the cleavage of the opposition takes place, and in which at the same time the opposite terms unite into one.

In each instance it is the ultimate term which has the content of reality proper, and in contrast with it the sides appear, in a manner, to be void of content, the reason being that the whole content of the sides consists in their opposition to each other; they achieve a content only in the ultimate term.

This is a view which may appear surprising in the first instance. In everyday life we neglect the most universal and general forms of our experience, and concentrate attention upon those details which most nearly concern our conduct of life, and in doing so we are in the habit of treating certain groups of terms which we invariably find united as though they were connected together in some peculiar manner; we say that they are the properties of a *something*, or *thing* or *substance*. But do we ever meet such a substance or thing in itself, and do we ever find this indissoluble unity corresponding to our everyday notion of an indivisible thing? Every material object may be divided into parts, and each part may be subdivided into smaller parts, until at length we reach the molecule; this in turn is divided into atoms, and the atoms, which recently were considered indivisible parts, are now seen to be exceedingly complex structures like small planetary systems. We pass from thing to thing, and apparently there is no end to the process; but in the end we find nothing but ultimate terms and relations. Before our eyes we have the fiction of things; in fact, we never succeed in seizing an ultimate and unanalysable reality, while the intellectual process by which we seek to apprehend it leads to infinity.

It may be asked what attracts our attention so that in the confusion of surrounding details we pay no heed to the severance into opposition which is immanent in the ultimate term (in other words, to the prime form): why do we feel the impulse to make a "something" the object of our thoughts in order that we may refer to it the ultimate terms given us empirically?

Once we have apprehended the prime form in its full scope and universal validity we may hope to find the path which leads from this higher form of apprehension to the more customary forms of everyday life which we find it so difficult to abandon. We must have learned to effect this transition with scientific exactness if the change in the manner of apprehension, which is here demanded, is to be felt otherwise than as an irksome compulsion. Once we have succeeded in this we shall be convinced that we have discovered the natural fundamental order of human thought.

At this point we have treated the ultimate term in its most abstract and general form: it is characterized here solely by its relationship to the prime form of relation. Another assertion, however, may be made which has universal application to ultimate terms. It deals with an ultimate fact which meets us wherever such a term is given, and consequently it is required in order to complete the description of these terms. This fundamental fact is the multiplicity of terms in general, which means that there is no *single* Ultimate which is complete in itself and admits of no further analysis. The concept of ultimate term means multiplicity of ultimate terms. This is an axiomatic statement, and it completes the prime form already discovered, in which opposites are united, to be severed again in the prime ultimate term.

If we attempt to form some intellectual notion about this fundamental fact of the multiplicity of determinateness we immediately find that this fact is a particular variant of the prime relation: we find that it has the form of an opposition. The particular form is that of unity with multiplicity, where unity must be understood to mean that a multiplicity of terms is united together. It implies that multiplicity can be manifested only in the union (in some sense or another) of a multitude of terms. Individual terms not united by any relation whatever could never be imagined as a multiplicity or even as a multitude in any sense.

In the propædæutic system we met multiplicity already at the first stage of order; but at that point the multiple terms were united by the fact that the form of space, which is perfectly uniform, held together and related the terms. At the second stage the unity of time was added, which involved the close reciprocal interconnection of all the elements of the Whole. But, further, the Many of experience form a unity precisely because they are all united and related together in this experience. In each instance we are here dealing with the unity of the Whole, a unity which it is absolutely impossible to break up: it is the primitive unity, by virtue of which all the elements of the Whole are related to one another. Thus the unity of manifold terms is closely related to, if not ultimately identical with, the unity which we find in the prime form of relation, which is the unity of opposites. This will appear very plainly in the further course of the analysis.

We found that multiplicity is a characteristic of the fundamental terms, and we apprehend it in the form of multiplicity in unity. This is the quantitative aspect of the fundamental form. This

quantitative form of opposition is in a sense an intermediate form; it is the rational link between the two main poles of the prime form, namely, the fundamental form of relation and the fundamental terms. We had already discovered another kind of link between these two poles, which consisted in this, that the fundamental term is the limit in which the severance into opposites is manifested. It is this bilateral connection which binds the fundamental form of relation and the fundamental terms into a single whole.

We might begin by making a distinction between two forms of the Many, multiplicity and manifoldness. But at this point we need not explain them further: we shall employ one or the other as the occasion arises.

In the two forms of opposition (*viz.* unity in multiplicity and unity in manifoldness), unity (as it has done throughout) denotes the fact of union, or what may be called synthetic unity. The notion of multiplicity, however, leads us to another concept of unity—one that is based upon the concept of multiplicity. This is the notion of unity as an element in multiplicity. However, the particular form of opposition, in the shape of *elementary* unity in multiplicity, is not of much importance for our inquiry. In the sequel we shall mean, by unity, synthetic unity, unless the context clearly demands the other meaning.

In human experience multiplicity means order combined with an arrangement of superior and inferior stages. Unless these are present in some form we cannot conceive of any kind of multiplicity, and everything that in this respect can be regarded as a whole can in another respect be divided into several entities of an inferior order (Internal gradation). At the same time every whole unites with others to form a whole of a higher order (External gradation). On no occasion has a truly ultimate Whole ever been reached either in the progress to higher or to lower stages. Ultimately the Whole is that higher entity in which all the terms, even those which now seem to us to be quite irreconcilable, are united into one. But this Whole, too, we cannot comprehend, and at this point it is perhaps no more than a fiction, albeit one which we are practically compelled to adopt; although, on the other hand, it is hard to imagine that there can be any ultimate barrier to the arrangement of orders in progressively higher stages.

This system of orders and stages represents the element of modality in the prime form. Evidently it is no more than a particular manner in which manifold multiplicity is comprehended into a

unity: it is that narrower and more definite manifestation of the quantitative aspect of the prime form to which we gave the name of unity in multiplicity. At the same time it manifests in a general way the manner in which the reciprocal relations of the Whole unite with and are realized in the category of multiplicity. These relations have been met already in their narrower manifestations as forms of space, time, and knowledge.

At this point we may safely omit to ask what is the detailed significance of the orders and stages, how far they may be pursued, whether there can anywhere be an ultimate stage, and the like. At this point the important matter is that the multiplicity of experience is invariably arranged in stages and orders: and this latter fact we will pronounce an axiomatic extension of our prime form.

In the course of our investigation we were struck by the fact that the subject could be arranged in accordance with certain points of view proper to formal logic. These evidently are deeply rooted in human thought. Retaining this arrangement, without rigidly adhering to it, we may describe the prime form as follows:—

1. From the point of view of relation:
Opposition with unity (reciprocal implication).
2. From the point of view of quality:
Ultimate term (determination).
3. From the point of view of quantity:
Unity-multiplicity.
4. From the point of view of modality:
Gradation and order.

These four descriptions can be summed up in the following statement, which at the same time emphasizes their inner connection:—

The Whole of human experience is one, and at the same time it is a multiplicity, and the whole of it is ruled by order. The prime form of all the reciprocal relations within this Whole is opposition: this severs and resolves itself in the ultimate term, or limit.

This is our fundamental axiom, and the rest of our investigation will be built upon it. We have taken more than one sentence to enunciate it, but in spite of this it is one and indivisible, and the

several assertions which we made about it are merely manifestations of one and the same prime form. Intellectually we make a distinction between relations and ultimate terms; but in fact neither can exist without the other. The prime form of relation is simply the form of opposition, and the prime ultimate term is a multiplicity vertically arranged in stages. We have already seen that the ultimate term is the source proper of the form of opposition; and this, the prime form of relation, is the main driving force for the analysis which we intend to undertake, and which will be our main task. We shall see how far it will carry us, and then only we shall be in a position to estimate the range and scope of the prime form.

The form of opposition has a particularly wide range, and for this reason a caution is needed against any attempt to test the significance of this form upon any of the pairs of opposite and correlative terms of current speech. Such concepts as male and female, attraction and repulsion, dissolution and union, light and darkness, plenum and void are comprehended within the prime concept, but they are not fundamental pairs of related terms: on the contrary they are exceedingly complex, and it is a difficult process to resolve them into their ultimate elements. The terms of these relationships are quite loosely connected, and although it is possible to trace back the relation between them to the prime form of opposition, the process is more or less intricate. This is even more true of oppositions, which are merely matters of degree like more and less, great and little, light and dark, poor and rich. For our purposes these are practically useless. Geometry does not deal with physical lines, and confines its investigations to abstract intellectual structures, its first aim being to obtain a footing, and to throw light upon the simplest relations; and similarly we will begin by directing our attention to the simplest and most abstract prime relations, which are given us by virtue of the prime concept in order to obtain a perfectly firm foundation. Having done this we may be able to draw conclusions which will give us additional strength, when we may hope to penetrate a little deeper into the more complex particular manifestations of the prime form.

We must therefore begin by taking the prime form of relation quite abstractly; it is intended simply to denote an opposition, the members of which are each the condition of the other, and at the same time are resolved in a single datum.

The importance of this form of opposition lies in the fact that we meet it everywhere in the most universal and fundamental forms of

our experience, where it appears as an ultimate form of relation admitting no further analysis. We had already found examples of it in the severance into opposites which is met in every immediate elementary datum (or, more precisely, in the twofold direction of elementary sensation, from subject to object, and from object to subject); in the opposition between being and not-being, which exists in becoming, in the twofold opposite sense contained in the point of time (past and future), in the cleavage into opposites of every spatial determination (more precisely inner and outer, concave and convex, cp. also the twofold sense of every straight line), and in the division into opposites, viz. action and passivity, of every simple action (more precisely, the division of every force into the opposites of action and reaction). Everywhere here we have the single unity within which the severance takes place. The sides of the opposition exist only together with and by virtue of this unity, and each is the condition of the other. The manner in which this takes place is as follows: Each of the sides is determined unequivocally and completely only by means of the other side and by means of the unity which posits and unites them—that is, by the limit, or the ultimate term. To the examples already cited we may add the notion of the Whole, within which takes place the severance between (synthetic) unity and multiplicity.

The concept of opposition which we have reached is an abstraction drawn from such particular examples. As a result our prime form of relation obtains an abstract meaning which we must carefully retain throughout the further course of our investigation, else if the word is used in the common, narrower, and less exact sense there is a danger that we might be carried away from our goal. The danger is the greater because in the historical course of philosophical thought, and more especially in the more primitive development of the prime form, those more familiar but loosely knit forms of opposition have played an important part. We shall find examples of this in the second, or historical, part of this work. We shall see how at another period such pairs of concepts as male and female, love and hate, attraction and repulsion were taken as the prime form. Thousands of years elapsed before the more universal and exact concept was developed. It has been my aim to lead up to a perfectly exact and abstract formation of this concept; with it will stand and fall all that remains to be said.

Fourth Part.—The Prime Form, its Uniformity and the Relativity of its Manifestation

Internal Interconnection between the Characteristics—Relativity of Manifestations.

Examples: "Determinateness" as Starting-Point—Axiom of Determinateness—Axiom of Multiplicity or Manifoldness—Axiom of the One and the All—Axiom of Opposition and Reciprocal Determination—Axiom of Gradation and Orders.

The Three "Dimensions" of the Prime Form.

In the course of our description of the prime form we also obtained our axiomatic and fundamental concept. In this description several characteristics are logically of the same rank. That there is a necessary inner connection between them was apparent during the whole of the process which led us to the fundamental concept.

We began by sifting the whole of our experience, gave it a preliminary order, and discussed it from three points of view. As a result we reached one comprehensive form of relation. Next we noted that there was a connection between relation and determination.¹ A closer consideration of the connection showed us that the latter is a necessary axiomatic complement of the prime form of relation. Finally we found a fundamental characteristic of this determination in the fundamental fact that it is a multiple determination arranged in stages and orders.

This particular road, however, is not the only approach to the fundamental concept. In the prime form there is no *post* and no *ante*. The characteristics which we enumerated separately are merged completely in the prime form; each penetrates, and is the condition of the other. They form an indissoluble whole, and are inconceivable separately. But men exist in time and space, and our means of expression are incomplete; and consequently we cannot give a presentation of the fundamental concept except by emphasising one after another the different aspects under which it meets us. The order in which we do this may be chosen as suits us best; for example, we need not follow the order of the propædæutic system. It might be worth while to pursue each one of the possible roads,

¹ Up to this point "ultimate term" or "determination" (or "determinateness") has been used to translate the German "Bestimmtheit", the former where it seemed desirable to emphasize the fact that it denotes a correlative term to relation, the latter to express the fact that it denotes an entity having at least an element of independence. From now onwards the latter meaning seems to preponderate, and I shall confine myself to "determination" or "determinateness".—*Translator's Note*.

for this would offer us a better insight into all the interconnections between all the characteristics of the prime form than we obtain by considering it from one standpoint alone.

Thus we might have started from the fundamental fact that experience does not offer us an indifferentiated one, but is a multiplicity and manifoldness. We might then have discovered that this multiplicity demands a unity, because otherwise it could not be a Whole in which every term stands in reciprocal relation with every other. Further, we would have discovered that this multiplicity in unity is severed into a multiple determinateness and a multiple relation, and finally that the fundamental characteristic of all relations is the prime relation in the shape in which we first discovered it in the propædæutic system.

There is still another method of approach, which I will now briefly describe.

If we wish to imagine anything, or to form a concept about anything—if, in short, anything is to have a meaning or significance for us, it must be determined in some way or another. Something absolutely and wholly indeterminate would be absolute Nothing. Hence evidently Determinateness is a universal concept, and one that precedes all others. It would even have to precede the formation of the concept of Being, since we could never predicate being of something wholly indeterminate. Accordingly, we begin with the concept of determinateness, and this beginning we call the axiom of determinateness.

In order to throw light upon the significance of this concept we must consider what data invariably accompany determinateness in our experience, together with the manner in which they accompany it. We are looking for something which meets us always and everywhere whenever we can assert of anything in the most general sense that it is determinate; we are looking for that which is an absolutely essential part of its definition.

We might now proceed to show that every determinateness posits relations, and that it is a sort of limit which establishes a distinction between a hither and a far side, or a plus and a minus—in short, that it effects the severance of the opposition. We might demonstrate this upon the determinations of space, time, and knowledge in a manner similar to that employed in the second part of the propædæutic system. This would give us an immediate approach to the prime form of relation.

But we might also proceed by asserting multiplicity and mani-

foldness of empirical determinateness in a general manner, treating them as fundamental properties which we must simply take as given. Multiplicity and manifoldness cannot be eliminated from our thought. We can, of course, make the attempt to take up some perfectly simple and indivisible determination from out of the fulness that is presented to us; but this would be a task that could never in practice be fulfilled. The attempt must always fail, and even if it should appear to have succeeded we should never escape from the fact that such an elementary unit of Determination is always embedded in a structure of innumerable determinations all of which are in some manner interconnected. An actual determination only occurs within a multiplicity. This leads us to the axiom of the multiplicity or manifoldness of empirical determinations.

This co-existence, or interconnection of determinations, leads us further to realize that the totality of all the entities which could ever appear to us in a determinate shape must in some way or another have a synthetic unity. Manifoldness would have no meaning unless the Many were comprehended together in some way, for example by a single space, in which they exist together, or by a common time, or by natural connections, or, finally, by our thought, to which they must be referred if they are to enter into it at all. It is in this sense that we speak of a Whole or All.

We thus reach an extension of the axiom of manifold determination in the shape of the axiom of the One and the All.

The interconnection of unity and plurality in the abstract is a form of reciprocal relation. If we look at the meaning of this fundamental opposition of unity and plurality from another point of view, this form of relation will be considerably extended. The manner in which this happens is as follows: It is obvious that the reciprocal relation which subsists between all the members of the many is dependent upon abstract unity, and this is the only meaning of unity. Unity can be imagined only if we think of the many as interconnected, which, however, need not denote anything more than the fact that each one of the many is related to the rest in such a manner that it is possible to think of them together.

Now the coherence of the Whole is manifested to us in its most general form under a threefold unity—in that of space, which comprehends all the members of the Whole; in that of time, in which the Whole unfolds; and in that of thought or knowledge, without which human experience would be impossible. This leads us to ask whether this threefold unity can be reduced to a single form of

relation. Thereupon a careful comparison of the fundamental forms of time, space and knowledge brings us back, in the way which we have already seen, to the prime form of relation which we described as the unity of opposites, and which implies the reciprocal implication of opposites (Axiom of Opposition and of Reciprocal Positing).

Further, we discover that with respect to this prime form of relation the prime determination is, so to speak, the limit which severs the opposition. Further, we discover a particular manifestation of multiple determination and of the prime relation in the fact that the empirical All is arranged throughout in stages and orders (Axiom of Stages and Orders). This furnishes us with a complete definition of the prime form which agrees exactly with that with which we are already acquainted, and with an exposition of the inner connection between prime determination, prime relation, and unity with multiplicity (or, the All).

From whatever point of view we consider the complex of our experience we shall always reach the same final result, viz. prime determination or prime relation, or unity with multiplicity, and we shall also reach the same inner connection between these entities by virtue of which any one of them is manifested in the other two. Thus, for example, the prime determination (as limit) severs the prime relation (in the form of opposition), and the opposition of unity-with-multiplicity turns out to be one of the possible manifestations of the prime relation, manifested, in this instance, in the prime determination.

Figuratively we might call the three separate manifestations of the prime form its three dimensions. And indeed we may suspect that these three dimensions of the prime form might provide us with a kind of three-dimensional system of co-ordinates, and it might prove surprisingly simple and easy to refer to it any further conclusions that we might reach. I prefer, however, to avoid such a method, convenient though it might be, because I do not wish to hamper our further progress by formalism of any kind except that which the structure of the prime form itself compels us to adopt.

Further, the three manifestations of the prime form might be interpreted as foreshadowing the three most universal categories, namely, that of Quality (Determination), Quantity (Unity-with-Multiplicity), and Relation (Prime Relation and Opposition), to which

might be added a fourth and particular manifestation, Modality (Gradation and Order). At this stage, however, such a comparison would be no more than an intellectual sport: the profounder significance which it does, in fact, contain will not become apparent until a later stage is reached.

Retrospect over Results Attained

Pure Prime Form as a Pole of Order—What Ought to be the Function of the Prime Form?—Examples—Fundamental Structure of Thought and Being—Natural Science and Mechanics—Part Played by the Prime Form in the Different World-Views.

The discovery of the Prime Form concludes the propædeutic system, a system which led us from the immediate data of experience step by step towards the fulness of reality. Although we may never reach this fulness of reality we know the road towards it and its direction, and on this road have become acquainted with the prime form, which is manifested at every stage of the general forms of order. This Prime Form is what may be called a pole of order, and we have the right to expect that it will lead us to a particularly successful order of our experience, an order which will lead us farther and deeper than can the preliminary order of the propædeutic system.

First, then, we expect some light upon the inner connection between the three forms of order (space, time, and knowledge) which we accepted as empirical data in the propædeutic system. We have already seen that the same prime form manifests itself in each of the three forms of order, and that the chief distinction between these forms resides in the fact that they are different manifestations of this prime form; and this discovery will suffice to lead us to the suspicion that a more exact analysis of the prime form would reveal the interconnection to us, and would lead us to a general system of order of a far more complete and uniform nature than that which we made the foundation of the propædeutic system.

We shall be the more confident that this prime form will prove to be the key to a number of questions when we call to mind the course of its derivation in the propædeutic system, and remember how

this form is manifested in a distinct shape in every instance where we succeed in apprehending with a particularly clear and immediate intuition the general characteristics of the empirical world with which we are presented. We will enumerate a few examples of this. Thus we see in the *present* of the temporal series how past and future determine and also sever each other. In another sense the temporal series may be considered as a series of becoming, and in this series being and not-being are merged into one, a process in which one incessantly passes out of the other, being out of not-being, and not-being out of being. Again, in every manifestation of "actual" being, that is, in action, there is reaction as well as action, and these may be looked upon as two opposite terms, which however are absolutely inseparable and must be regarded as two ways in which the same reciprocal action may be considered, or as forms of its manifestation. Further, every spatial determination and limitation posits a hither and a far side, an inner and an outer, a concave and a convex, a greater and a less, each a pair of terms which are united in one entity in such a manner that one is inconceivable without the other; while in every determination considered as an event of consciousness (and there is no other way in which we are acquainted with these events), and in every sensation and datum and everything which "belongs to us", a twofold relation of fundamental opposition immediately arises which points alike inwards and outwards. This relation we might call that between ego and non-ego, or subject and object. Finally, the fundamental opposition between unity and multiplicity is manifested as the opposition between two terms which can never be severed from each other and are ever being merged into one.

If we avoid a timid adherence to the mere outer form and keep before our minds all these forms of manifestation in their fundamental significance, we shall see that the connection which is manifested in them is always of the same kind, and that it is always this interconnection which leads us back to the ultimate roots out of which our concepts grow. Noting this, we are led to suspect that we are here face to face with the fundamental structure of the whole of thought and of being. We are dimly aware that we are dealing with a fundamental form, the discovery of which will throw much valuable light, and must finally explain the ultimate interconnection between all the forms of manifestation which we have already sketched, as well as on many others.

We are confirmed in this expectation when we review the many

previous occasions on which this idea has proved its analytical driving force. Men did not know it clearly, and were not aware of its significance; but it was nevertheless an idea which could not escape the scrutiny of philosophers. In all the profoundest systems we find it recurring in the most various manifestations.

Let us take for example the law of reciprocal action in mechanics. It is cast in a proposition which is a simple reproduction of the structure of the prime form. It may be enunciated as follows: Every simple action at a point of which the kind, magnitude, and direction are known is determined by two opposites (or Forces) coinciding in one point (the point at which they operate), and which have in common every determination relating to kind, magnitude, and absolute direction of the action.

In mechanics this is a law of the widest application and can be developed very far by the help of analytical methods when it is applied to the general concepts of mechanics. In mechanics the law is formulated mathematically which happens in the following manner: Given an action of which the magnitude and direction are known, the action is divided into two forces of the same magnitude and absolute direction, acting in opposition to each other in this absolute direction. Algebraically this opposition is expressed in mechanics by the opposite signs $+$ and $-$. A suitable mathematical presentation of this law leads to d'Alembert's law.

Our hopes are further stimulated when we see how all the most comprehensive systems of philosophy and the keenest intellects of past ages have always deliberately attached importance to this fundamental structure—a structure which provided at once the plan, the foundation, and the sustaining force to the whole of the system. The form is manifested with particular clearness with Nicolas of Cusa, Fichte, and Hegel, but it can be traced in almost every thinker, from the ages of the most ancient mythological systems to this day. The fundamental idea is not perhaps elaborated in every system with the same exactness which it has in those mentioned above. Nevertheless, it emerges everywhere behind the most various forms of expression and in spite of apparent contradiction.

Accordingly we may expect that the fundamental form will bring a notable contribution to the ordering of the whole system of our concepts; more especially to the ordering and clarification of our universal concepts.

3. Methodology (Methods of Discovery, Interpretation, and Representation of the Structure of the Fundamental Form)

Methodological Importance of the Empirical Foundation of the Prime Form
—Importance of Principles and Rules within the System.

(a) *Methodological Principles of Analysis.*

First Principle (Principle of Relativity).

Second Principle (Principle of Projection).

Third Principle (Principle of Interconnection).

Particular Rules for Analysis—Danger of Abstractness—Confusion due to Words.

(b) *Rules of Interpretation.*

Fundamental Rule.

Particular Rules: Characteristics of Correct Interpretation—Errors—

Practical Limits of Interpretation—Rudimentary and Complete Concepts.

(c) *Means of Presentation.*

Dangers in Words—Psychological Tact—Formulæ and Symbols for the Representation of Concepts.

Two questions await us: What can the prime form reveal to us, and what is the surest and best way by which we can reach these revelations? The answer has been hinted at above; the method is one of logical analysis and interpretation.

In a certain sense the prime concept includes all that is derived from it later. Consequently it was important already at the point when it was first set up to throw enough light upon it to show how far it is interwoven with the whole of our experience. It had to be shown that it is not an empty word or a hypothetical form. The wide foundation on which we have built the prime concept will greatly facilitate the interpretation of the results of our analysis.

There was yet another method open to us. We might have begun with the strict formal definition of an axiomatic fundamental concept as is done in abstract geometry instead of deriving it from experience. However, even abstract geometry is based ultimately on the world of images which we draw from experience, whence it derives certain universal characteristics from which it builds up the system of its axioms and its fundamental concepts. These are cast in such a manner that the judgments which are reached through them do not conflict with logic, and that their particular manifestation at least agrees exactly with experience. These preliminary considerations are not, of course, expressed in the logical structure of geometry.

Now the axiomatic fundamental concept which we have found is far more universal than the axioms and concepts of abstract geometry. We are compelled to base our own supremely abstract fundamental concept upon a wide base of the kind of empirical

intuitions which are best fitted to support it, on pain of hampering concentrated attention and of loss of intelligibility. The concepts and inferences which we mean to derive from our fundamental concept are intended to apply to our reality, and this is possible only if they are based upon vivid intuition. It is this intuition alone which can guide us in the interpretation which we apply to our formal inferences, and both these and the interpretations will always have to proceed hand in hand with those intuitions which constitute their foundation. If we adopt this plan we may succeed in progressing step by step until we have understood and laid bare to a wider extent than has proved possible hitherto the natural plan of our experience.

For this reason I do not intend to adopt the strict formalism of abstract geometry; what I have done was to show in outline how a propædæutic system might be constructed which would give us those intuitions upon which our fundamental axiom (i.e. the prime form) is based.

For analysis as well as interpretation we require certain principles and rules to lead us safely to our intended goal.

The principles of analysis must be self-evident and must not be arbitrary. Clearly this is possible only if we derive them out of the prime form itself; and in fact the principles which I propose to set up assert simply the indissoluble unity of the prime form, without which the severance of the prime relation into opposites and the manifoldness of the prime determination would alike be meaningless. It is this unity by virtue of which there is nothing primary or secondary in the prime form, while all aspects or points of the prime form are of equal validity to one another, and the whole of the prime form may be derived from each individual point. The notion really is obvious, and I cast it in the form of a particular principle only because I wish to delineate as clearly as possible the road by which we mean to travel, and to render our conclusions as sure and exact as possible, especially where their derivation is somewhat complex.

Much the same applies to the rules of interpretation which remain to be set up. Nothing alien or arbitrary is to be introduced by them into our system: on the contrary, they are to constitute the bridge leading from our analytical structures to their empirical counterparts, and it is their function to translate the language of formal

analysis into experience. Thus ultimately the rules which we intend to set up simply mean this—that they call to mind the manner in which we first reached the prime form (as was done, for example, in the propædæutic system), a form which was based upon the totality of our experience. This reminder will make it easier to understand the value in the sphere of reality of the particular modifications of this prime form. The distinction between interpretation and its rules, on the one hand, and purely formal analysis, on the other, is made simply because it lends clarity to the system and is a safeguard against aberrations into irrational bypaths.

The principles of analysis are reached in the following manner:—

The prime form is one, but, as we saw, it can be presented to us in the greatest variety of manifestations. In the world of experience we are always faced with manifestations of this kind. In the first instance we do not apprehend the reciprocal relations within the Whole as we would see them if our contemplation of them were guided by the abstract prime form. In part this is due to the fact that we are planted in the midst of the confusion of life, and that the manner of our thought is adapted to its requirements. Further, we are compelled to take up a particular attitude with regard to the prime form because we are thinking subjects and as such do not stand *above* the reciprocal relations of the Whole but *within* them. We are one side of these relations, and consequently in the first instance we see the prime form in a kind of distorted perspective. The perfect unity of opposites and the prime form in general in its pure and abstract manifestation lie at the limit of our intellectual effort. Their full and immediate intuition would require that we should overstep the circle in which we are held fast as individuals—a circle which we can ultimately master only by means of a series of intuitions taken at the extreme *limiting* point. In order to bring this about we approach the prime form from every possible side, and learn what view of the fundamental complex each point of view offers us. Thus we learn how to recognize the permanent characteristics and to distinguish them from those which are due to the particular point of view. This was the method by which we had already succeeded in the gradual discovery of the prime form above.

In order to apprehend the indivisibility of the prime form we apply

the fundamental law implicit in it, and in order to do this we first assure ourselves that the requisite inner coherence is in existence and then proceed to copy the resultant relations; in other words, we obtain a number of separate manifestations of the prime form. This process leads us to the concepts of sides, *opposition*, *reciprocal implication*, and so on, concepts which might be described as parts of the whole prime form.—We shall not hesitate to adopt this description.—At bottom they are simply the prime form in so many particular manifestations, and the prime form, in spite of its manifold manifestations, is one, since it is indissoluble and indivisible.

The incomplete concepts thus resulting may be compounded with one another in a number of ways, a process in which the reciprocal relation of these concepts to one another, and the unity of the prime form, emerges very clearly. We may here begin from any point (i.e. incomplete concept) of the prime form, and pass over in any order we like to any other point; but in effecting our transition we must take into account the nature of the structure of the concepts between which a junction is being effected.

This gives us our first principle, which we may formulate as follows: The relations corresponding to the prime form can be unfolded from any point and in any order (Principle of Relativity).

If we attempt to achieve the prime form from any one point—for example from one side of the opposition—then at the very moment at which we are segregating this side we have already seized upon the whole, for the prime form is always one and indivisible. To it the expression All in One and One in All may be truly applied.

By means of this relative emphasis of one of its sides we have in a manner “projected” the whole of the prime form into this side. This fact becomes the more immediately evident the simpler are the relations which we are considering, and the more directly they follow from the prime form. Evidently we are quite free in making such “projections” of the prime form. At the same time we must keep our eyes fixed upon the whole structure of relations by means of which the point into which we are projecting the prime form is connected with the remaining points of the prime form.

We are thus enabled to enunciate a second principle: We can imagine the prime form as projected into any point of its complex of relations (Principle of Projection).

According as we select different starting-points, a different

manner of approach, and different projections, we reach a number of different relative variants of the prime form. These do not exclude but complement one another. It is the sum total of these manifestations which gives us a complete picture of the prime form in its final evolution.

On the other hand, we are also free to collect a number of separate manifestations into a whole, if this suits our purpose. In doing this we must take care that the forms are considered as standing in that relation to one another in which in fact they do stand by virtue of the inner law of the prime form and the manner of their derivation.

We thus reach a third principle of analysis, formulated as follows: A number of separate manifestations of the prime form can be gathered into a unity, in accordance with their structure (Principle of Interconnection).

These three simple principles can be reduced to the single principle which states that the prime form is one. We shall soon find, however, that they prove exceedingly fruitful, offering us a purely formal method of approach to more and more complex structures of relations.

The road which we shall have to follow in this progress will lead us through the region of the most abstract and universal relationships. There is no sensuous intuition here to guide us: we are led merely by the formal laws which we have discovered. We shall make sure of these on our road by recalling to mind the ideas from which we started, the order which we derived from them, and the whole of the road which we have already covered.

Mathematicians frequently are in a similar position, in which case they have recourse to simple symbols which express certain relations which in turn are connected in accordance with certain laws. They are thus enabled to express very complicated abstract notions and to operate safely with them, without being compelled to have in mind continually the whole of the theory on which the application of these laws is based. We, on the other hand, are practically without help of this kind, and in order not to be led astray we shall keep before our minds so far as we can the general picture of the order which we discovered. At the same time we shall have to have recourse to experience in order to assure ourselves that we are still on the right road.

It is, however, part of human nature to grow weary on these abstract roads, so that the chain of derivation is in danger of breaking. The resulting gap might then fail of being bridged at all,

or else might be spanned only by means of an unconscious and unjustifiable transvaluation of words and concepts. The whole region will have to be explored in every direction before we acquire the skill and practice which will allow us to put simple words to the same use (although on a less ambitious scale) as that to which formulæ are put in mathematics when complex structures of relations have to be described. So long as we have not yet attained this skill and practice we must mistrust words, which may easily prove false guides.

This is the more likely as the course of our analysis will give us certain concepts which are exactly defined, and for the description of which we have to make use of words which have been used previously, but in a much less exact sense. Such words are often ambiguous, and we might easily be led to give free play to old but irrational associations which would draw us from the narrow path of our analysis.

The danger is greatest when everyday words of current speech are used in the most abstract region of all, in order to denote concepts. Such words invariably carry a heavy load of associations, and in the abstract region there is no room for these. Such words are particularly apt to break the smooth progress of analysis. Since, however, we cannot do without them, and it is undesirable to coin new words, we shall have to use them and remain on our guard.

During the process of analysis we shall have to examine the structures resulting from formal analysis in order to discover to what extent they are compatible with an interpretation of reality agreeable to our experience, our habits of thought, and our intellectual capacity.

Clearly such an *interpretation* of the formal system must consist in a search for such groups of relations within our experience as correspond exactly with the structures which we discovered within the prime form by means of analytical processes. In this search we have no principles which can guide us unequivocally, as we had in analysis. But still we have certain indications.

The first indication is furnished us by the propædæutic system. Here the road which we followed was the opposite of that which we follow in the process of interpretation. In the propædæutic system we began with the totality of experience, in order to derive the prime form from it: here we begin with logical-analytical and

formal groups of relations, and look for their equivalent in the world of experience. A thoroughly elaborated propædæutic system will prove to be a treasure-house for our interpretations. The relation of our system of abstract structures to a single definite interpretation of this system might perhaps be compared to the relation between abstract and Euclidean geometry, in so far as the latter can be looked upon as an empirical interpretation of one particular version of this abstract system.

It may be asked whether the abstract system which we intend to reach by means of analysis will admit of no more than a single interpretation absolutely corresponding to our experience, or whether there might conceivably be more than one, each as good as the other. The question need not be answered. If we succeed in finding an interpretation so universal, complete, and harmonious that it leaves no room for any doubt or question, we shall accept it as though it were the only one.

The interpretation of the system which we reached by means of analysis is beset by as many dangers as the analysis itself, and we must proceed cautiously if we wish to avoid pitfalls. The interpretation is a kind of picture, and no empirical concept may be allowed to form an element in it unless it is a perfect version of the formal content of the concept which it interprets, together with all its implications. Such a concept must correspond to the empirical foundations on which the prime concept and the whole of the formal structure is based, and the correspondence must be so exact that the interpretation appears unforced. The interpretation gives us a picture of reality, and in this picture each of its characteristic traits must appear quite self-evident. Partial interpretations must form a whole without contradiction, and they must do so in the same sense in which the partial forms of the prime form, which they interpret, form a single whole.

In order to avoid error in the process of interpretation we must be on our guard against habitual associations of ideas and the suggestive force of ambiguous words. Such words are even more essential to interpretation than to analysis. So long as we are moving in the region of the simple complexes of concepts there is a particular danger that in our interpretation we may allow words to involve us, without any intermediate stage, in the complicated world of our everyday concepts. Before we can reach these complex

empirical forms lengthy analytical preparation is generally required, and frequently the attempt surpasses such powers as we possess to-day. If strictly scientific results are desired there must be no skipping, however brilliant, of intermediate stages. Unless we are satisfied with results, of which we have a clear view, elements may easily be introduced into these results which are no longer in conformity with the formal content of the analytical complex.

The results of a strict process of analysis will always be of the greatest importance, but their contents will always be small as compared with the vast richness of the relations between the data of our worlds of experience and imagination.

In the first stages of analysis we shall move in extremely abstract regions. During this process we shall see that even the simplest and most universal concepts which our intelligence has carved out of experience in the course of ages are exceedingly complex structures. This is true of such concepts as *substance*, *space*, *time*, *becoming*, *ego*, *thing*, and so forth. Of these all that we shall be able to discover is the main outline, and even this we shall be able to discover only step by step.

In the course of this progress the germ of a concept, which remains to be evolved into fulness stage by stage, will frequently have to be denoted by words which recall the full concept. This constitutes a strong temptation to associate with the germ of the concept much that, although it belongs only to the full concept, has taken an important place in our associations in the course of the repeated use of the latter. We are the more likely to succumb to the temptation, the more abstract are the concepts with which we are operating.

In order to avoid this danger we shall have to bear in mind steadily the road by which we have reached those concepts to denote which we are compelled to employ a word already burdened with associations. Unless we do this the danger remains that in using this word we displace the limits of its meaning laid down in the course of our derivation.

If our interpretation or the associations which we attach to it do not agree exactly with the results which analysis gave us, we shall be involved in irrational confusion or in verbal ambiguities which may lead us to overlook the fact that we have already lost our solid foundation.

Words have the power to mislead us, not only in analysis and interpretation, but also when we come to give an expression to the order which we have discovered and correctly interpreted, and when our ideas have to be communicated to others.

Most of the notions of everyday life are very vague, and most words ambiguous, so that often it is difficult to exchange ideas about them even when the object and examples for the interpretation of the word are clearly present to the mind. In everyday life our thought does not follow clear and logical definitions, and consequently we often speak at cross purposes; and we are compelled to make use of these same words, which are inadequate even to everyday use, if we wish to express unambiguously to our interlocutor those far profounder relations for which at present we lack the words. All the irrelevant associations which otherwise are wont to accompany the use of such words must be suppressed, and the thought must be concentrated exclusively and exactly upon the matter in question. This demands a keen sensitiveness for psychological and linguistic values.

Words never are more than conventional symbols. But where a convention is arrived at, there more than one person must be acquainted with the object of discussion. Now this acquaintance is lacking in the abstract region: it still remains to be communicated. To this end the other person must be guided through a vast confusion of details to certain characteristics of the world of our experience, to which normally he is not in the habit of paying attention. It is a task which demands much of both parties: it does not suffice that the person who is attempting to communicate his own idea has a clear notion of it; he must also have the skill so to act upon the other that he is enabled to discover the right road. And again the only means which he possesses to this end is language.

But all the skill and tact of the speaker is of no avail unless the mind of the other is able and willing to receive what is offered. He must be "tuned in" if the words of the speaker are to cause reception in him. Naturally the preparation and the tuning are the more difficult, the more abstract and complex are the ideas which are to be communicated, and often it is a matter of luck if the audience is found which is wholly captivated by the words of the speaker.

Philosophical exposition has no rigid means, deriving a compelling force from their external form, such as there are at the disposal of mathematicians and natural scientists. Geometry, for

example, is founded upon the intuition of space, and, until it passes beyond this foundation to non-Euclidean and absolutely abstract considerations, it does not meet with the kind of difficulty with which we are faced. Even then it has a powerful aid in the shape of the analytical formulæ, the importance of which has been discussed above.

It might be possible to devise aids similar to that of the mathematical formula for abstract philosophical investigation; and indeed such is our plan. But it is unlikely that they would ever attain the importance of formulæ and symbols in mathematics. They might prove a useful means of communication: for investigation they are likely to prove less useful.

In my *Grundriss* (1889), and again in *Wirklichkeit, Wahrheit und Wissen* (1919), I have attempted to introduce symbols to denote concepts—a method of representation by means of a kind of diagram—for the most abstract parts of analysis. They were intended to accompany words if not to replace them. In the brief survey of the system to which I now proceed I shall refrain from the use of such aids.

II

ANALYSIS

A. The Central System

WE now proceed to the formal and logical analysis of the fundamental concept. This will introduce us to a purely formal system of pure concepts. Concurrently with our investigations we shall look for the appropriate interpretation of reality, so far as is possible, although a complete interpretation of the conceptual structures cannot be reached until the later stages of our analytical development are attained. However, I propose to point out even at the first stages those points at which the germs of the more important of the empirical concepts occur: those concepts which we shall fully reveal at a later stage by means of interpretation.

At the outset two sides had been distinguished in the prime concept: the prime relation and the prime determination. The former is the pure form of opposition (Relation), the latter is the element of immediate fact, the Real (or *quale*), severed from every kind of relation. We also found an intermediate or connecting form between the two in the shape of one particular (or "quantitative") form, that of unity-with-multiplicity; a particular manifestation of this in turn was found to be the "modal" side of the prime form, the system of Order and Stages.

A far-reaching analysis is rendered possible only by the prime form of relation. From this we begin. But the prime determination and the form of unity-with-multiplicity is indissolubly connected with the prime relation, and consequently the course of the analysis will lead us straight to it. It does not, however, enter into the foreground of our consideration until a later stage is reached.

Three principles had been set up for the working out of the analysis, and the whole of the analysis consists solely of the repeated application of these principles.

By means of the analysis we proceed to reveal more and more of the inner complexes of the prime form of relation. Thus we reach a group of universal and fundamental forms, which we will name collectively pre- (or supra-) individual Forms. They may be divided into two classes, the fundamental and the essential forms.

Next we consider the intermediate form of Unity-with-multiplicity and thus reach the "individual forms". These are divided into individual forms in the narrower sense (prime individual forms) and organic forms.

The further course of investigation then takes us to the "trans-individual forms". With these it is determination that stands in the foreground. They are divided into world-forms and universal forms.

A. Pre-Individual Forms

(a) Fundamental Forms

The Three Particular Concepts of the Prime Relation—Discovery of the Completed Form of the Three Particular Concepts: 1. Unity—2. Reciprocal Dependence—3. The Two Opposed Sides—Two Modes of Apprehension—Meaning of One-sided Apprehension.

General Meaning of these Transformations—The Germs of Opposed World-Views.

Independence of the Prime Form—Germ of the Concept of Substance—Independence in Projection—Prime Determinateness in Projection—Further Development of the Concept of Substance—Determination and Reciprocal Dependence—Germs of the Concept of Action and Active Determination—Of that of Being—And of that of Thing—The Twofold Direction: from Outward Within and from Within Outward—Substance and Accident.

The Fundamental Structure of Continuity—The Differential and the Present Point of Time used to Explain this Concept.

For our analysis the prime relation is the most important manifestation of the prime form. We have already seen that it is a unity, and is complete in itself; but in the process of further description we found three characteristics to be emphasized, namely, Unity, Opposition, and Interdependence, which between them constitute the prime relation. This does not mean that the prime relation is made up of them: these three are three different aspects of the single indivisible prime relation as seen from different points of view. Each of these particular concepts is a Projection (within the meaning of our second principle) of the totality of the prime relation, a projection into one of the three points which are available for the purpose of investigation. In each of the three views or projections we have the whole of the prime form, for it is one and indissoluble. But also each of these views gives us no more than a relative form of the whole, as is implicit in the nature of a view or projection.

There is nothing mysterious or supra-sensuous in this; on the contrary, it is perfectly simple and obvious. It merely means that the unity of our prime form (to take an example) is not a perfectly abstract, unrelated, and "absolute" *Unity in itself*. Such a concept of unity would be wholly devoid of content. Here Unity simply means the unity of the opposite terms which are interdependent one on the other, and that is precisely the whole of the prime relation—that is, in one particular projection.

The first step in the process of analysis was taken already when first we expressed in words the prime relation by means of the three particular concepts.

Each one of the particular concepts which we segregate and emphasize for itself must lead us immediately to the others, which in their turn may be treated similarly; a fact which is readily intelligible and will be rendered still more evident in the sequel. These three terms are not the separable members of one fundamental concept, but are indissolubly interconnected by means of the prime form, which is one. They cannot even in imagination be disconnected, and are never anything but one thing, namely, the fundamental concept. All that varies is the manner in which it is looked at.

The next step in our analysis must consequently be to discover the particular relations which we obtain when we pass from any one point to any other. At this stage the points are the three particular concepts of the prime form of relation. This means in the main that the first principle is applied in three different ways.

1. Within the sphere of the prime concept Unity obtains a meaning through its relation to the cleavage into opposites—that is, as unity of two opposites. As such it has a twofold sense, according as it is referred to the reciprocal dependence or to the opposition between the two terms; on the one hand it appears as the entity in which the opposites are united, and which gives them that unifying reciprocal relation which alone enables them to be apprehended as an opposition; but on the other hand the unity also severs.

If we wish to imagine how it is possible for unity to sever we can imagine it as limit, in the sense which that term had in our previous development of the fundamental concept. Such a limit not only unites but also severs. Or we may imagine it as determination, or (if at the same time we bring in the notion of becoming) as the present reality which severs the past from the future; or again as

that single mechanical manifestation which allows us to speak of two opposite forces each of which postulates the other and determines its magnitude and direction. (This was treated under "action" above.)

The distorted version of the fundamental form which results if unity is emphasized as a severing entity, and is given the first place in our investigation, may then be expressed as follows:—

"The One divides itself into two opposite entities which are reciprocally dependent."

But other assertions may be made equally well, especially if greater emphasis is laid on the unifying force or Unity.

2. "Reciprocal Dependence" means that two opposite entities are connected in such a manner that each is unequivocally implied by the other, so that neither can be imagined without the other. The "limit" or "determination" is common to the two opposed sides, and it belongs to each of them in the same manner. Each side has a significance only by virtue of the determination, and the determination is shared with the other side; and it is by virtue of the determination that the sides stand in their relation of reciprocal dependence.

To take a particular instance: "action" cannot be imagined by itself, but only as interconnected indissolubly with the reaction, which is its exact obverse. It has kind, magnitude, and absolute direction in common with it, and differs from it only in the sense of its direction, which is opposite. To take another example: the past cannot be imagined without the future from which it is separated by the point of the present. Each is the condition of the other, and between them they form a whole.

The distorted version of the fundamental form which results if reciprocal dependence is emphasized and is given the first place may be expressed thus:—

It is by virtue of reciprocal interdependence that two opposite entities coalesce in an indissoluble unity; or in other words: by virtue of reciprocal interdependence two opposite entities emerge from this unity, which entities are mutually exclusive and indissolubly connected. Each unequivocally determines the other.

3. The "opposite sides" can be imagined abstractly in one of two ways, either as mutually exclusive sides (or members of the opposition which emerges out of the unity) or as the two sides or members of the opposition which coalesce in one unity by virtue of the fact that each is the condition of the other.

As a concrete example of such Opposites we may take two opposite directions leading away from a Unity which is common to both. (This common term may be, for example, a spatial limit, the present moment, "action", or any sensuous determination.) We might also take more closely determinate pairs of opposites, which for this very reason have a more complicated internal structure, like right and left, inner and outer; or even Ego and Non-ego, force and counterforce. Either both of these sides can be considered as having equal validity or else one of them may be considered for itself.

The distorted version of the fundamental form which results in the first instance might be expressed as follows:—

The sides condition and determine each other reciprocally, and merge in a higher unity; or, The sides condition and exclude each other reciprocally.

The distorted version of the fundamental form which results in the second instance might be expressed thus:—

One side postulates (or posits) another term which is equivalent and opposite to it—that is, it posits the other side; and this second side is already contained in the first side by virtue of a higher unity which is the basis of a reciprocal dependence.

We see, then, how the distortion is exaggerated when one of the two sides is emphasized, and how in this way one of the sides appears to obtain a kind of superiority over the other; it seems to be independent, while the other is dependent upon it. The singleness and unity of the prime form in which the one side is manifested appears in a sense to be translated into this side: it is "projected" into it. As a result this side has an appearance of completeness and unity undiminished by the fact that it also points beyond itself. The centre of gravity of the natural order has been displaced.

We have now seen a number of examples which showed us how it is possible to reach particular versions of the prime form of relation as we found it in our fundamental concept, these versions being absolutely different from one another. We transform the prime form much in the same way in which an equation is transformed in analytical geometry, where each version of the equation gives us the same structure, while at the same time each particular manifestation emphasizes a different characteristic of the structure. Similarly a spatial structure may be projected into a number of planes, when the special shapes which it assumes in the process

and the interconnection between the planes allow us to infer all the properties of the spatial structure. The separate versions of an equation in analytical geometry, and the projections into different planes, are no more than relative forms of expression which are compatible with one another: their totality gives a complete picture of the geometrical structure in all its complexity, while by itself each version can serve a useful purpose only from some certain point of view: it is merely relative.

The same is true of the particular versions of the prime form, each of which has no more than a relative validity. In themselves all forms are admissible that give a correct representation, if those their characteristics which happen to be under consideration give a correct representation of the abstract fundamental relation. Every such form throws light upon a different aspect of the prime structure; but unless we remember that they are merely relative we shall bar the way to a more comprehensive and deeper understanding.

At this point we have reached three main groups of particular manifestations of the prime form of relation. In the first instance it might appear that they are natural variations, since the first glance reveals that all the three merge into one. The fact that the interconnection of the particular manifestations emerges with such compelling force is due to the extreme simplicity of these abstract structures, which allows their definition to be made quite exhaustive. At this stage the differences between the distorted forms may appear to be negligible. Nevertheless it is possible already here to discover the first germs of the opposition between different world-views. As a rule such fundamental contrasts have been taken for logical contradictions which are supposed to be incompatible with one another. Already, however, we have accustomed ourselves to take opposite terms, not as independent entities resting upon themselves, but as reciprocally dependent, one being the condition of the other, and as merged in a superior unity. The importance of this will become more and more evident in the sequel.

The relativity of the starting-points and of the versions of the fundamental concept ultimately contains the germ of the relativity of the world-views—that is, the germ of a rational “Relativism”. I have hinted at this above, and it will prove the last conclusion to follow from our analytical structure.

We shall now proceed by stages to more and more complex abstract structures of the same kind, and in this process we shall meet a great number of concepts which we shall easily recognize as traits of the most general kind (or as *germs*) of the current universal concepts with which we are familiar. These general concepts are exceedingly complicated, and we shall not be able to define them with the same ease which we applied to the concepts with which we have dealt so far. The only method by which we can obtain a survey and a mastery over them will be to pass step by step through all the preliminary stages, from the first germ, which go to the formation of such concepts, and to keep present before the mind the totality of the relations which they have led us to discover.

To begin with, we once more recall the fundamental concept, and more particularly the prime form of relation. In this form the opposed terms which are merged in the unity are in a relation of reciprocal dependence: each of the two opposed sides is the condition of the other, while the other is the condition of it. If we transfer the emphasis from the opposed sides to the prime relation, treating this as the unity of the opposed and reciprocally dependent sides, then it appears as a complete entity in itself, not related to any term outside it on which it is dependent. Thus in a manner it is absolute, whereas each of the sides is relatively dependent, and has no meaning if treated as independent.

The term "absolute" was used above merely in order to adumbrate our meaning, and it must not be allowed to mislead us into associating groups of notions with it for which we have not yet completed a rigorous derivation. At the same time we have at this point the right to say that in the independence of the prime form as defined above we have the first germs of the concept of substance. It is true that a very long road, a road having numerous intermediate stages, will have to be covered before this concept is fully developed.

If now we imagine, as was already suggested above, that the whole of the prime form is projected into one of the sides, then by virtue of this projection the prime form communicates something of its independent and absolute nature to this side. It is true that this takes place only in the manner of a passing thought and applies only to the moment of contemplation, since we might pass over equally well to the other side, or return to our original view of the prime form which stands above the sides, so that the individual

sides cease to have an independent meaning. Thus there is something arbitrary in the method of projection, although on the other hand we must not forget that such projections are not purely arbitrary: like the prime form itself, of which they form part, they have a certain meaning if treated as realities.

It is precisely when an entity is considered under the category of "one of two sides" that it obtains a particular meaning as reality. This is due to the fact that we who are attempting to embrace the whole do not stand above it, but are ourselves a "side" within it: we are one side of that opposition between subject and object which is the foundation of the whole of our thought and imagination. It is only at a later stage of our investigation that we shall be able fully to appreciate and understand this fact. At that point we shall also understand the connection by virtue of which our thought is held fast on the one side (the Ego), and why it is that this relation, as well as our general power of projecting the prime form into one of two sides, is the chief reason why our thought continually tends to assign the status of *thing* to each of the two sides of a reciprocal relation separately—a method which is in contradiction with that which we are following at this moment. The tendency of our common thought is to attribute to each term of the reciprocal relation an independent action not due to the other, then to add the relation between the two sides, and finally perhaps to pass over to the higher unity.

But we are anticipating. At this first stage of the investigation we must be on our guard against such an intellectual one-sidedness which leads us to imagine the sides as independent and as *priora* to the whole. Such an idea would be in conflict with the "natural order". It will be our task during the further course of the analysis to discover the approaches to such one-sided terms, together with the conditions of their validity. During the course of this analysis we shall also be able to throw light upon those highly complex relations which allow us to speak of "substance". We found the first germ of an explanation of the notion of substance in the independence of the prime form, and we found a slight development of it in the projection of this form into one of two sides.

Up to this point we have considered chiefly the prime form of relation and have somewhat neglected the prime determination. It is the determination, however, which is the occasion of the

cleavage which takes place within every opposition. It stands between the two sides and at once severs and unites them. In the first instance it belongs to each of the two sides in the same manner: thus, to take actual examples, it is the limit between two sides, or, with immediate sensuous data, it is the fact of sensation, which is determined in such and such a manner and stands between subject and object.

Now the determination belongs to each of the two sides in exactly the same manner, and accordingly we have an equal right to refer it to either of them. If now we do what we did before, if, that is, we mentally emphasize and isolate one of the two sides for itself, then this implies that we shall also refer the determination to this side in a one-sided manner. In that case the side is "determined", or "limited". This constitutes a further development of the concept of substance.

The concept of the reciprocal dependence of the sides also obtains a somewhat different meaning. Instead of saying that the sides condition each other, we may now say that they determine each other, and accordingly determination now appears as reciprocal determination, a concept which in turn contains the germ of *action*. We thus witness how the abstract concept of determinateness begins to unfold by virtue of its relation to the prime relation.

We said above that one of the two sides may be taken as determined in such or such a manner. If we do so we may easily see how this implies a number of new concepts. On our view determination stood in the closest possible relation to reality: thus we may take the side which is determined as "posited", "affirmed", or "realized". But at this point all these are no more than words for us, intended to direct our attention to the general direction in which we are progressing. They are not meant to bind us in any way: they are meant to make intelligible our anticipated remark that we have before us the germ of the concept of Being. Here all we can do is to hint at this.

The new manifestation in terms of concepts which we have gained is thus compounded with the concept which we described above as the germ of the concept of *substance*, and as a result of this conjunction both Being and Substance develop further. Their projection into one side leads us to the germ of the concept of a *thing* or a *something*. In connection with the concept of a substantial something

or substance, the concept of action—the germ of which has already been discovered—obtains a more narrowly defined meaning, which allows us to progress by stages to the concept of a force.

In this sense the transposition of the centre of gravity within the indivisible prime form gives, in a manner, a certain absolute, substantial, and real character to the side in which determination takes place. On the other hand, the determination which is an actual datum obtains a peculiar and double meaning in its relation to the side which is apprehended in this manner. On the one hand, it appears as a determination of this side, and the side possesses a certain independence, in the sense explained above, by virtue of the absolute character of the prime form which it mirrors. But, on the other hand, the actual determination cannot take a full share in the independence of the side, since in the prime form it represents precisely that unity and indivisibility which belongs to both sides in the same manner. Accordingly it also leads us immediately to the other side. It manifests itself as though belonging to the one side, but in fact it is dependent on the other, since it is also a determination of this other side. The existence of one side depends upon it, and consequently it belongs essentially to that side: nevertheless it cannot be absorbed wholly into the inwardness of this side, since it is not only dependent on the other side, but also belongs to it immediately and essentially and is a condition of its existence. Thus its attachment to the one side is, so to speak, merely external.

Thus, when reality is ascribed to one side, a twofold relation emerges for the determination; and out of this those special relations, among others, are developed which allow us to speak of an inner and an outer, as we already did by anticipation above.

The same special relation, and more particularly the merely external attachment of the determination, contains the germ of the concept of the "accident", a concept which stands in the closest relation with, and is the complement of, that of substance. The concept of accident will obtain its full significance in the course of our investigation, and will accompany the elucidation of the concept of substance.

In order that full light shall be thrown upon the concept of substance we must further clear up the relations of the natural order. It was this set of relations which compelled us to undertake the projection of the prime form through which we reached the germ of the concept of substance. In the first instance this projection

has the appearance of a point of view which is permissible in formal logic; but we do not yet see what it is that causes us to prefer precisely this kind of projection when we attempt to apprehend the world. I have already given a hint of the direction in which we must look for these special order-relations. I indicated that the Ego is not an independent spectator standing above the system of relations which make up the Whole, but is a member or side within them, striving to comprehend it. The importance of this remains to be explained: but it is not the only or even the chief element required for the answering of this question, and we shall soon meet with others.

We saw above how the determination is the connecting link between the two sides, and how it leads from *inner* to *outer*, where the former is the side which is objectified. We further saw how this leads us to a particularly pronounced conflict in our view. The mere emphasis laid on one side suffices to compel us to think of the other; but as soon as we apprehend a determination we have taken one pace beyond this side, since the determination already belongs to the other. But if we pass over wholly from one side to the other we are led back again in the same manner to the first.

The conflict lies in this union and severance of the sides—in the demand that one shall be extended into two, and that two are to be imagined in one. This internal conflict arises from the one-sided projection of the prime form, by means of which one of the sides is isolated; and it is rendered more acute by the fact that the two sides are one, and are determined in common.

The conflict has its origin in the prime form itself. For us it is no less than a new manifestation of the prime form of relation. In my *Wirklichkeit, Wahrheit und Wissen* I have described it under various points of view as *tension*, *extension*, and *oscillation*. It is this special form of relation which provides us with the framework from which the concept of continuity is later developed, so that this form of relation may be treated as the germ of the concept of continuity, although our justification for such a treatment will not appear clearly until we pursue in detail the whole of the development of this concept through all the stages under which it may be considered. In *Wirklichkeit, Wahrheit und Wissen* I have carried out this process at considerable length; here, where my sole intention is to give a general survey of this series of ideas, it would lead

us too far if I were to assay a complete development of this extremely complicated concept. I propose, however, to devote a separate chapter further on to a survey of the chief members in the series of this evolution.

In view of the great importance of the concept of continuity we must devote a little further space to the form of relation which is its foundation. In this instance we shall look for it in those forms of continuity with which we are best acquainted, and which we call space and time.

Our purpose is to obtain as simple a view as possible, and to this end we shall go back to the entity which in mathematics is treated as the element of continuity and is designated (for example) as differential. In this attempt we shall do best to follow the example of mathematics and to confine ourselves to one dimension of the continuum; for example, to a temporal series or a line in space.

It is customary to speak of an "element" of this Continuum, an expression which is apt to mislead. We must be on our guard against treating this element as a portion of the line. In fact it is merely an abstract form, and whatever view we take of it, it still is something which, while retaining in full the peculiar nature of the Continuum, has been deprived by abstraction of measurable extension in space. In a certain sense the element of the Continuum is a point; but at the same time it is more than a point.

Let us imagine the differential of time, namely, the point of the present. It is a point, but at the same time it is more than a point. We may imagine it as a single and indivisible ultimate entity; nevertheless it is also an extension. It radiates alike past and future, and these are its two sides, merging in it in an indissoluble unity. The present is a comprehension into one and at the same time a severance, and this property is part of its most primitive nature and essence.

The fundamental structure of extension, and of every Continuity in general, implies that it is a point and yet two divergent terms, neither of which can be imagined without an immediate passing over into the other; while even in the ultimate element imagination is severed into an oscillation between the hither and the far side. These are the reasons which allowed us to see in that which I called above *oscillation* and *extension* the germ of the concept of continuity.

It is a fundamental peculiarity of Continuity to be an indivisible point and at the same time to radiate a duality, and it is

this peculiarity which is the origin of all the antinomies and paradoxes connected with the concept of a Continuum and of the kindred concept of infinity. We have here the root of that epistemological conflict which since the time of Zeno has kept speculation busy for centuries, but has not succeeded in removing or even modifying these antinomies and paradoxes.

We shall now become acquainted with a further number of stages of contemplation, at each of which a new and a more complex form of relation will result. Most of the new forms will turn out to be developments of those germinal concepts which we discovered when considering the fundamental forms. Thus we are led up step by step to apprehend those general empirical concepts of which up to this point we discovered no more than the first germs. At the same time we shall have an insight into their reciprocal relations.

(b) The Rudiments of the Concept of "Essence"

The Complex of Relations based upon the Concept of Essence—"Essence" and "Side"—"Content"—Relation to the Other Side—Oscillating Form of the Essence—Germ of the Concept of Subject-Object—Germ of the Concept of Consciousness—Germ of the Concept of Action in a Certain Direction—Volition—Its Distinction from Psychological Volition—Germs of Further Structures.

Our third principle permits us to combine a number of different forms of relation into a unity; a unity which will have a meaning, since all of them are no more than different views of the same entity. Accordingly we imagine all the particular forms which we have developed above as projected into one side and as comprehended together in it. The resulting structure of relations we shall call *essence*, which term at this point is not to denote anything but what results immediately from this definition.

Essence defined in this manner may be taken as a multiplicity of particular forms of relation comprehended together in one side, so that we are here applying the form of relation of unity-with-multiplicity. So far, however, it is no more than a concept to aid us in presenting the concept of essence, the deeper analytical meaning of which will not become apparent until later. When that happens we shall have to pass back to its original foundation in

the prime form. Now in that structure of relations which we call essence, all those fundamental forms of relation which we had developed severally at the first stage of our consideration will be interrelated reciprocally, a process which raises them to a higher stage within our survey. All those germ-concepts which we found at the first stage will now be looked at under a fresh light, and will be further developed.

Essence as a structure of concepts is simple in comparison with the structures which still remain to be derived from it; absolutely, however, it is so complex that some practice is required in order that we shall be able to keep it present before the mind as a totality. It is no arbitrary structure; and all the concepts which our three principles allow us to derive from the prime form are immanent forms of the prime form. The only question which can be raised in each instance will be what interpretation of reality is implied in such a concept, and what is the value of this interpretation in our search for an order of our experience.

The full significance of the concept of essence will not appear until we discover the analytical basis on which this new structure rests. Besides this we shall also have to understand the relation subsisting between this concept and the concepts drawn from experience with which we are familiar, and we shall also have to grasp the true reason which in fact compels us to distinguish between a multiplicity of particular forms of relation, all of which we comprehend together in one side. In the development of philosophy the concept of essence has played an important part; its designations have been various and its definition somewhat vague, but it is universal, and as such of wide applicability.

(In essence all the fundamental forms of relation, together with the determination, are to be treated as referred to one of the two sides alone. It is thus an analytical extension of the concept of *side*. We may take the *side* as the most primitive and universal projection of the prime form which arises when we lay a one-sided emphasis on one of the two opposite directions which are implicit in the prime form, in which process we assume that they are supported by the prime form. Essence is a projection of the prime form in the same sense, with this distinction, that the prime form is not taken in a general manner, but with all the variants that can be obtained by processes of analysis. Accordingly, in the category of essence one of the sides appears as "determinate", as "being", as "substantiated", all these properties being manifested in a

rudimentary sense; further, it appears as an "Inner" as opposed to an "Outer", as "determining" the Outer, that is as manifesting the rudiments of "action", as influenced by the Outer in its own determinations, as in a state of "oscillating" connection with the Whole of the prime form (this is the rudiment of a "continuous" connection) by virtue of which connection its own unfolding takes place in an "oscillating" manner ("oscillation" once more being the rudiment of "continuousness"), etc.)

We thus see that the one side which is treated as essence has a tolerably various content. True, this applies only so long as we pay particular attention to the one side, thus giving it a peculiar stress. But if we do this the idea of essence has to be applied to it of *necessity*, since this idea follows from the fact that we stress the side and try to render an account of the version of the prime form obtained in this manner. We do not import the variant forms—they emerge of themselves from the prime form.

Essence as a totality of relations is valid so far as the prime form is valid. Essence is a concept which arises whenever we lay emphasis upon the "side" which is an element in the prime form; whenever we do this the concept of essence becomes valid. It is true that in the first instance it rests with us whether we pass over to the other side and stress this other side; and to this extent (and to this extent alone) the concept of essence at this stage of our investigation has an element of arbitrariness. The cause of this is that all concepts at this stage are extremely abstract: at later stages the inner necessity and significance of this intellectual structure will emerge more and more plainly.

Now it is possible to lay a one-sided emphasis upon one of the two sides, thus assigning to this side the whole of the content which emerges from the prime form. If this is done the other side appears empty. At any rate, this applies so long as we make the one side the exclusive basis of our consideration; for the prime form is one, and consequently each of its projections is, in itself and for itself, One and the Whole. Thus there is a sense in which the side on which the emphasis is laid is the Whole; it is a monad, and it is distinguished from the other, or "empty", side by the fact that it has a "content". But while the other side is in a sense empty, it is not therefore simply nothing. Its prototype lies implicit in the first side, but it is not apprehended by us in the same manner as the first side. A certain inhibition prevents us from passing out of the side which we have already apprehended, for in so far as it is

essence it also contains the Whole, and the other side does not appear as "posited" in the same manner as it.

In spite of this the other side is of the greatest importance for the structure of essence; for the two-sidedness and the whole of the inner cleavage of the prime form persist in its one-sided projection. Hence it is inevitable that a relation to a term lying "without" should emerge out of the form of essence.

It is, in fact, the inner cleavage of the form of essence out of which those inner contradictions of the forms of existence take their origin which have occupied thinkers from the time of the Eleatics up to our time. We are here beginning to see a little more clearly the ultimate reason of this cleavage.

In order to obtain a good view of the peculiar nature of the structure of the relations we shall do best to begin from the "determinateness" of essence. It follows from our remarks about fundamental forms in general that essence is a Whole complete in itself and independent in the manner in which a substance is independent. By virtue of its determinateness we also predicate being of it. At first this being means that it is in such and such a way; it is determinate being. This determinateness refers to the inner part of essence, and consequently appears as though it were its property or a belonging, where the latter term is meant at this point to denote no more than follows immediately from its context. It remains still to be seen how it obtains a further content.

The determinateness just mentioned also refers to something Outer. If we concentrate our attention upon this relation to the Outer it appears that determinateness is a property of essence, but at the same time is in a manner forced upon it by the Outer, so that determinateness neither is plainly proper to essence, nor is produced by it. This inner conflict and the fact that it is of a dependent nature cause the determinateness to be a mere accident of essence, whereas the prime form of relation, as was seen in the first part of our analysis, gives to it a certain independent nature which contains the germ of the concept of substance.

Although determinateness appears as a property of the one side, it does not belong to it exclusively; it includes something alien, and by virtue of the fundamental structure of essence it is related immediately to the Outer. It is this Outer (which yet is implied in the determinateness of essence and which is an external term to which the determinateness is referred) by means of which a peculiar meaning begins to attach to the notion that a determination

may be a property, so that we can speak of it as the object of possession.

In any case we have here before us the cleavage into opposites of this possession, and one is tempted to divide it into a subjective and an objective side. Indeed we have here the germ of the concept of the subject-object relation. We shall interpret and develop it in this sense at a later point.

The Outer, then, has its implicit prototype in essence; and, further, there is a special form of relation by means of which the determination which is referred to the Outer is the property of the essence. By both these facts the determination, when apprehended in its objective sense, is immediately referred back again to the Inner, and herein we notice a special manifestation of the form of oscillation. To make use of a comparison, that which is posited as Outer, or object, is reflected, so to speak, by the object in the same way as it was projected outwards by an inner compulsion when essence was treated as subject. So long as we do not break up this form altogether, the Whole, in spite of this oscillation, resides in the Inner, and accordingly the Outer appears dependent upon the Inner. This oscillation within the essence is the first manifestation of continuity, as follows from the previous stage of our consideration.

We have thus reached a structure of continuity for essence which obviously is closely related to the structure of our sensation and perception, and in fact we do see in it the germ of the concept of consciousness and of the form of knowledge. With Fichte and Hegel the development of the concept of consciousness is very similar. At the same time we have no more than the first germ of the concept of consciousness, and we must not forget that a long road remains to be covered before we reach its full development.

If now we recall our remarks about the germ of the concept of being we shall be able to take the concept of consciousness as a further development of that concept. Here, in the concept of consciousness, being and continuity are related to one another in the closest manner.

One of the various forms of essence is the one which must be described as the germ of the concept of volition. In order to discover it we begin with the concept of action, the germ of which was found already among the fundamental forms. At that place it resulted from the reciprocal dependence of the sides; when at the same time

we pay attention to determinateness, the reciprocal dependence means a process of reciprocal determination, and in reciprocal determination we saw the germ of the concept of action. The first form of this in the natural order is reciprocal action.

Now at the stage of the form of essence we place the centre of gravity of our consideration and of all the particular forms exclusively in one of the two sides. Action consequently appears as though it were supported by this side; it is a kind of action (or of determining) which belongs to this side. At the same time, however, this action is not exhausted in this side. The fact of reciprocity remains, and turns it towards the other side, the Outer; and action in general is action turned outwards. It is a determination of the other side which stands over against it.

We may here recall that we discovered the germ of the concept of being in the determinateness of the one side and its connection with other fundamental forms. We have now reached the point within the category of essence where the concept of being develops into the concept of action having a certain direction. The intermediate stage through which this further concept is reached is determinateness, which is taken as a reciprocal determination. Now we have already developed the concept of being from another point of view, though under the same category of essence, a process by which it evolved into the germ of the concept of consciousness. Thus the concept of action having a certain direction is compounded with those of being and consciousness: and it is clear that the whole of this compound structure is the germ of the concept of volition.

Here again we must draw attention to the fact that we have no more than the most rudimentary germ of that which we call volition in the psychological sense, although on the other hand this concept is sometimes made so wide that it becomes very nearly co-extensive with our elementary concept. Schopenhauer frequently uses will in this more general sense. But the narrower sense in which psychology uses the concept will not be met with again until a later stage is reached, that of the "organized individual".

This is volition in the proper psychological sense, and it is based essentially upon the faculty of recollection, which in turn emerges only at a more complex stage, that of the "multiple" individual. It is associated with the conception of aim and means. To this must be added certain peculiar relations subsisting between the imagination and the motor organs of such highly organized individuals. In the more highly organized animals these relations depend on the

system of motor nerves, and this in turn depends on those nervous systems which are the foundation of the faculty of recollection. Psychological volition is an exceedingly complicated process; ultimately, however, it is no more than one particular manifestation among others of that fundamental form of relation in which we saw the germ of the concept of volition.

The forms of essence, and more particularly the form of consciousness, furnish us with the first germs of the structures called Ego and non-Ego, which are closely connected with the subject-object relation. Our attention has already been directed to it, and it also played a part in the concepts of action and volition.

By a consideration of action, and more particularly of reciprocal action, we are further led to the concepts of activity and passivity. At the stage of the forms of essence the germ of the concept of continuity, further, can be developed until we are able to discover in it the rudimentary beginnings of that which, at a later stage, will be recognized as time. This brings us to the second of the three separate manifestations of continuity which have been described in the propædæutic system. The germs of the third of these forms, namely of space, will not be found until the next stage is reached.

This brief survey allows me to do no more than to make mention of all these particular forms. The three main forms of continuity, however, will be dealt with together below in a separate chapter.

B. Individual Forms

(a) Simple Individual Forms

The Axiom of Multiple Determination—Relation between Multiplicity and Unity—Compounding Manifoldness with Opposition—Example.

The Individual—The Individual in our Inner Experience—"Mirror of the Whole"—Solipsism—"Transcendence".

Multiplicity of Individuals, "Monads"—Further Development of Rudimentary Concepts—The Concept of Substance treated as an Example.

We began our analysis of the prime form by taking the prime determination as being simply a Whole, or One. In the course of our analysis we saw how this One is divided, and we found that the result consisted in two terms in a strict relation of opposition. Besides the division into opposites we had, however, discovered

another form of division of the One in the prime form, namely, the manifoldness and multiplicity of the given determination; and it is this latter to which we now propose to turn our attention. This will lead us to a further stage in our survey.

Multiplicity is something different from the duality of opposition; and this duality is not simply one particular instance of multiplicity, for it does not admit of any more or less. Nor does it imply simply that two terms exist together side by side: it is an intertwining of two terms which are indissolubly connected, each of them being the condition of the other. Accordingly in the rest of our consideration multiplicity cannot simply be substituted for the two opposite terms: it must be compounded with the latter until there results a whole, and this whole is multiple opposition. The meaning of this we shall soon see more clearly. On the other hand, multiplicity does not simply remove the unity of the prime form; on the contrary the unity is correlated to it and it is the multiplicity of the original datum, the One.

The fact that the empirical One is a multiplicity is an original fact which we must simply accept, as we took it in our derivation of the prime concept, when we stated that the empirical Whole is determinate, and that this determinateness is a multiple determinateness.

It is certain that the determinateness of the Whole in its totality (for which we may also say the determinateness of the All, or in a slightly different sense the prime determinateness) is a whole and is one. There is no means by which this unity can be removed; but at the same time it has an inner manifoldness. It is not an absolute unity, but a unity plus multiplicity, since within the One a multiplicity of single terms may be discerned, all of which, however, are connected in some way so as to form a single whole.

It is impossible to imagine any multiplicity without such a synthetic unity; for if all the individual terms are apprehended together as a multiplicity this implies that they are imagined as forming one entity, and a mere comprehension together would be impossible unless there were some common ground supporting and uniting all the individual terms alike. Thus multiplicity cannot be conceived without unity. On the other hand, unity by itself is meaningless also, and is conceivable only in a relation to two opposite terms, or to a multiplicity of terms. Thus the Whole is one single unity, within which an indefinite manifoldness is united by bonds which are primitive and indissoluble.

We must now ask what new forms of reciprocal relation emerge out of the prime form if we lay emphasis on its multiplicity. It is clear that the fundamental relations already discovered will be altered in no way by the fact that we are now considering the determinateness as a manifoldness, while hitherto we had been considering it as a unity. The prime relation of strict opposition and all its derivatives will still apply when we are allowing due weight to multiplicity, for our prime form has no room for exceptions.

Manifoldness and multiplicity thus do not cancel the duality of the opposition: they do not take its place and are of a different nature. All that they can do is to complement or to combine with it.

There are, then, two unities: the one from which the two opposed terms emanate, and the one which holds together the empirical manifoldness. Now it is evident that these two are one and the same unity, namely, that of the prime form. Hence the only manner in which they can be combined is one in which the strict form of the opposition of two terms is preserved with reference to each one of the many sides (or "points") of the determinateness. In other words, we must be able to imagine multiplicity in general as divided into two opposite terms at each and every one of its points.

Now the entity which is determined as a Manifold is one. Consequently, when such a division takes place, it must be the *whole* of this multiple determinateness which must form the foundation of such a cleavage and must form the multiple limit standing between the two sides. The only way in which we can imagine this is to assume that over against each single side the totality of all the other sides stands in opposition. Thus the multiple determinations, taken as a totality, form the limit for each single point, and the totality of all the other points of the multiple determination stand in the relation of Outer to this single point.

It is clear that a multiple manifestation of the original reciprocal relation corresponds to the multiple determinations. Let us take for example a triple determination, which implies a triple reciprocal relation, and let us briefly denote the sides by A, B, and C. Then the reciprocal relation can be represented in three different ways: there can be such a relation between A and B-C, another between B and A-C, and a third between C and A-B. Thus we obtain what may be called a threefold individualization or emanation of the prime relation.

Each of the three specific individual forms of our example is a manifestation of the pure form of opposition: we have, so to speak,

three projections of the prime form, one into each point or side of the threefold determination; and each of the sides presents us with two opposite directions.

In reality, however, we have not a triple determination. The one and indissoluble prime determinateness of the Whole contains an indefinite multiplicity, and the same applies to this multiplicity as was shown to apply to the triple relation of our example.

We saw that the prime form can be imagined as projected into either of the two sides of the opposition. In the same way we can imagine the whole of the prime form to be projected in any point of the multiple determination. Now in this sense we imagine all the fundamental forms and the forms of essence which we have developed in the two previous stages as projected into one point of the multiple relation and as comprehended together in this point. We give the name of Individual to the resulting structure of relations. The Individual then is a specific manifestation of essence. We further give the name of Individual Forms to the specific forms of the prime form which we obtain for the Individual in the further course of our analysis.

In making use of the term of Individual in order to denote a form of relation we must clearly understand that it can be no more than the germ of the concept which is frequently denoted by this term. The individual with which we are dealing here shares only the most universal characteristics with the higher form of the Individual with which we are acquainted from inner experience. The analytical exploration of this kind of form will take place at the next stage.

On the other hand, there is no reason why we should not draw upon our own inner experience in order to get a better view of the facts which permit us at this stage to speak of an Individual, since we can find within ourselves the general characteristics of the concept of the individual such as we have just defined it. The most important of these are the following:

There is a strict relation of opposition between our Ego and our non-Ego. The latter is the totality of the Whole that lies outside the Ego; and the Ego is one. It stands in a reciprocal relation with this totality, and is indissolubly connected with it by means of the prime determination and the prime relation which prevail in the Whole. It is the meaning which the point, as a One, obtains when it stands in a reciprocal relation to the Whole that allows it to

become an Individual in the strict sense. The whole of its being is constituted by this reciprocal relation, which is connected with the fact that the determination is a multiplicity.

We find an individual within ourselves; and in the same manner in which we find it, there must necessarily be an individual corresponding to each point in the multiplicity of the Whole. At the stage of the individual forms the Whole can be taken as the sum total of all the individuals, and these in turn may be taken as emanations of the prime form, that is, as specific manifestations of the prime form from the standpoint of the several "points".

Each individual is dependent on the totality of the rest. The whole of its "content" and its determination is a datum resulting from its relation to the totality of the rest. Thus we may say that each individual mirrors the Whole in itself in the same sense in which Nicolas of Cusa, and Leibniz when speaking of his monads, made this assertion.

It is equally certain and self-evident that the totality of the rest depends on the individual. This dependence of the Whole upon the individual implies a solipsism of the kind which was cautiously outlined by Fichte.

If in our consideration of the specific manifestation of the individual form we do not pass beyond the single point, that is, the inner form of the single individual as we find it given within ourselves, then there is no escape from this solipsism, since the origin of the individual resides in the projection of the whole of the prime form into one point. Thus, if instead of winning our way to an understanding of the prime form in general we had taken the individual form—a manifestation of reality in the shape of something isolated—as our first indissoluble datum, then we could never have progressed beyond solipsism.

We must remember, however, that the prime form can be projected into any point of the multiple determinateness of the Whole; and if we do so project it, we shall recognize the relativity of solipsism. Having done this, we can easily pass beyond the isolated individual form, proceeding to transcend from our higher point of vantage the solipsism beyond which otherwise we could never have passed. Thereupon we perceive that solipsism is one among many standpoints each of which is equally valid for a contemplation of the world, and that it is a composition of all the views obtained from the sum total of the possible points of view which alone can give us a complete view of the Whole.

We are individuals ourselves, and our thought is tied to the individual form. We have seen, however, that this individual form is merely a reflection of the prime form; and once we have perceived this we are easily led to supra-individual systems. The latter can be traced clearly in all their details, and in this process of tracing we see that the whole system of relations into which we project ourselves in order to apprehend them ego-centrally can be represented from every point of the multiple determinateness in exactly the same sense as from our egoistic point; in other words, that there are individuals besides ourselves. This implies that we pass beyond the solipsistic and ego-centric individual form, a progress based on a perception of the ultimate and immanent nature of the system. To this we give the name of Transcendence.

Transcendence takes us beyond the limits of our Ego and allows us to reach the concept of a multiplicity of individuals, each representing the same One from different standpoints. Considered by itself, each of these individuals is characterized by the solipsistic isolation which we described above: to use the terminology of Nicolas of Cusa, each reflects the "contracted" universe. In spite of this isolation, however, they are all in a relation of harmony to one another, a harmony which is guaranteed *ab initio* by the fact that they are all embedded in the prime determinateness of the Whole.

This is the central idea of Leibniz's theory—a theory which at first glance seems sufficiently strange—of the "windowless monads" and of the "pre-established harmony". In his latter years Fichte realized this quality in Leibniz's system.

All the rudimentary concepts which we have so far discovered are developed a good deal farther at the stage of the individual form. The concept of being and that of consciousness are seen in a new light; and the concepts of Ego and non-Ego, of Things, Becoming, Space, and Time, grow more and more solid and tangible. It is impossible to develop these assertions here in detail, but in order to give at least one example I will briefly treat the development of the concept of Substance. A special chapter will be devoted below to Space and Time.

We treat the individual as a substance in so far as the individual contains the data which led us to form the rudimentary concept of

substance. The individual substance has the following particular characteristics:

The individual is an existing entity, and as such it possesses, and has for predicate, determinateness, though it is true that this determinateness is attached to it in an external manner (the meaning of external was explained above) and is an "accident". Now this possession obtains a peculiar meaning for the individual as such by virtue of the contrasted pair of unity and multiplicity. The individual is not only One in the sense that it is one of two opposed terms, nor is it only the unity of the opposition; it is beside the synthetic unity of its own multiple determinateness, and an ordinal (or cardinal) unity among many others such. In a synthetic sense it contains multiplicity within itself, and it is this fact in particular that gives emphasis to its meaning as embodiment of the multiplicity, a meaning which comes near to the ordinary concept of substance. Similarly its determinateness as manifoldness, as opposed to the unity of the individual, becomes "accident" in the technical sense.

The individual is also one—cardinal—One among others, and stands in a reciprocal relation to all the rest; in reciprocal action it is a unity of action.

It is the "mirror" of the Whole in the sense already explained. It differs from all other Ones by the manner in which the Whole is reflected from its peculiar standpoint. At our next stage this point in particular will receive much fresh light.

If we had already developed the forms of time and space as we find them at the stage of the individual forms we would be in a position to add that the individual is spatially separated from all the rest and is at the same time spatially united with them all in one grand order. In the change of Becoming the individual is the unchanging element.

All these different characteristics are combined with those which we found at the stage of the fundamental forms of the rudimentary concept of substance, and developed further at the stage of the forms of essence. In this manner our concept of substance comes nearer and nearer to the complex concept which has been built up, irrationally, under the name of substance, in the course of ages. The point has now been reached where we reveal the ultimate rational sources of this peculiar structure. At the same time we obtain a grip of the complete apparatus which we require in order to make clear the connection of this concept with the other universal

concepts. The manner and the prospective results of this process can no longer appear doubtful after all that we have said: for the relevant details the reader is referred to my *Wirklichkeit, Wahrheit und Wissen*.

(b) Organic Forms

The Notion of the Individual ordered by Gradations—Organic Forms—Significance of this Stage of the Survey.

Rational and Irrational Determinateness—Ultimate Entities or Infinite Gradation?—Ultimate Entities and the Axioms.

Inner and Outer Organization—Distinction, Manifolddness, Persistence, Thing, Substance, Life—Limits of Analysis—Indications drawn from the Empirical Sciences.

Faculty of Recollection, Thought, Spirit—Volition.

Specific Form: The Community—Common Soul, Ideal, Ethics, Religion, Law.

The concept of Gradation leads us into a new sphere.

Up to this point we had looked at the individuals which correspond to the different sides of multiple determination as though they were all of equal value. We had found no occasion to assume that there was any other distinction between the individuals than that which follows from the individual relation of each individual to the total system; a distinction which would, however, be of small importance if we assume that the structure is homogeneous at every point.

Now it might quite well be the case that that side of the multiple determination which we look upon as individual contains in turn a multiple determination of a different order. As an example of this kind of double order we may take the organism. Externally we may take it as an Individual, but at the same time it contains a multitude of organs, each of which in turn may be treated as an Individual of a lower order. To take a concrete instance: We can pursue this method, and at length we shall be treating molecules as individuals: but these in turn are complicated structures of atoms. Our assumption then is this: an entity may be treated as a simple individual in one order of reciprocal relation, but from another point of view it may be treated as a system of individuals of another order. The example of which we have just made use will lead us to suspect that this idea may be valid in actual fact: but we shall also see that it throws a new light upon all the results which we have reached up to this point. What we are dealing with here is that which, when defining the prime form, in the propædæutic system,

was called Stages and Orders; and this means order by gradation. There is an inner and an outer gradation: the former when we pass in our survey to individuals subordinate to the individual under consideration, and the latter when we pass to superior individuals.

An individual which is treated as a system of individuals of a lower order is described as a gradated individual. We speak commonly of individuals of different orders.

In the course of our investigation of gradated individuals we obtain a series of forms of relation to which we propose to give the collective name of organic forms.

At this stage of our survey many questions are answered which have embarrassed us hitherto and are, so far, unanswered. Now we begin to understand what right we had to use such terms as substance, consciousness, continuity, becoming, etc., in order to describe some of the rudimentary forms of relation which we had previously discovered and progressively developed. In fact, almost all the general predications which we can make about individuals, substance, becoming, consciousness, force, and matter, and most of those which we can make of continuity, space, and time, are definitely cleared up at this stage.

The following are some of the chief questions upon which light is thrown.

The significance of an individual for itself and in its relation to the Whole depends upon its inner gradation or "organization" and upon its external gradation or position, that is, upon the place it has in the higher organism of the Whole. To these inner and outer gradations we can give the name of resolvable, rational, or organic determinations. The most important of them is the peculiar co-existence of entities in time and space.

At the first glance it may seem to take us from the direct path if we give the name of rational determinateness to one particular class of relations. In reality the fact is that the concept of determinateness frequently turns out to be relative, and many of the entities which are commonly taken as ultimate, indissoluble, and irrational determinations turn out to be gradated and organic determinations when closely examined. The particular point of view from which we examine the facts will often decide whether an entity appears as an organic (or rational) or as an elementary (or irrational) determination; and the experience of natural science seems almost to compel us to the assumption that every determination has two sides, an irrational and elementary, and a rational

and organic side. Thus all our sense-perceptions in our inner experience have properties (or determinations) which are obviously elementary and irrational, while from another point of view, that of natural science, there seems to correspond to them an organic structure of a very complex nature.

In this connection the question arises whether in external or internal gradation there is such a thing as an absolute ultimate. The experience of science might tempt us to assume that worlds without end are revealed in the atom, and that microcosm and macrocosm are alike unlimited. Experience has never yet led us to any ultimates which were in every respect incapable of further resolution, nor is it easy to see what force there could be to compel our thought to assume that there is anywhere an absolute ultimate or element. If, on the other hand, we were to deny that ultimate entities are an inner necessity, then the question of the inner and the outer gradation of the individual would have to be brought into close connection with the concept of continuity and that of inner and outer infinity.

In any case the assumption of a gradation of the Whole, running outwards and inwards from each individual through a functional infinity of orders, is no more difficult to make than that of a functionally infinite divisibility of any temporal process or any spatial length.

Even if there were elementary determinations it is certain that the part which they could play for science and knowledge must be unimportant, since it would be impossible to give any description of them. If we consider our elementary sense-perceptions, which are the most obvious elementary determinations, we find that, in so far as they really are elementary, we can neither describe nor discuss them. Ultimately it is quite unimportant for our knowledge whether that which we call green is manifested to us as green, so long as the totality of the relations of this "green" to our other sensations is of such a kind as to lead us invariably to correct ideas and judgments. The ultimate irrational determinations would have no other function than that of supporting the relations; and these relations are the content proper of our ideas. The determinations in themselves we might well imagine replaced by others, and our ideas would have the same value so long as the interconnections subsisting between the determinations were exactly the same.

It might of course be the case that the determinations which we accept as ultimate are not so in fact; perhaps the supposition that

they are ultimate terms is no more than a fiction to which we resort when our further analytical progress is stopped. If this should really be the fact then it would become the task of Science to carry further the process of rationalizing what is ultimate merely in a preliminary sense.

At the present moment it may be doubted whether an unequivocal answer to our question about ultimate entities can be obtained; and it will perhaps remain impossible to obtain one so long as we are content to remain within the framework of our axioms; in other words, of our fundamental concept.

We may ask whether we must not assume as an irrational but given fact that the prime determinateness can be developed to infinity. If the answer be in the affirmative, this would mean that the prime concept as axiom would have to be extended—a step upon which we could not resolve without hesitation. Development to infinity would imply that, however far our knowledge may penetrate, there will always be something which will appear as an irrational determinateness, but which in fact can be rationalized further—that is, can be resolved into forms of relation and determinations.

Further, the advantage for our analytical process of treating such an assumption as axiomatic would be illusory: the assumption would imply the anticipation of a relation which is far from simple, and by casting our assumption in the shape of an axiom we would lose the chance, which otherwise we might have hoped to find, of clearing up this relation by means of analysis. We would be making roads impassable which might be rendered passable for some distance; and we would be importing into the prime form, and would treat as essential characteristics, such concepts as those of development and functional infinity. But, in fact, these concepts are not incapable of analysis; their analysis follows from the concept of continuity, so that it would be an improper distortion of the natural facts if we were to add infinite development as an axiom to the other essential characteristics of the prime form.

Accordingly we will content ourselves with stating that we are here face to face with facts of which we are not yet in a position to give a full account, and we will assume that a point will be reached without any alteration in the direction which we are pursuing from which we shall have a better view than we can obtain at the moment.

During the further course of the development we shall perceive that the issue between infinity and ultimate, unanalysable entities

takes a somewhat different form, when the entire distance from the prime form to the Whole and the fulness of reality has been covered. When that has been achieved a more exact formulation of the question becomes possible, and at the same time the question becomes considerably less important. It is closely connected with the question of continuity, and consequently it is altered as soon as we pass from the prime form, and discover by analysis the relations which we are able to reach through the concept of continuity and its specific forms of time and space.

We revert here to the gradation of the individual and its peculiar importance for us. We are already acquainted with the fact that gradation must always be looked at from two points of view: each individual contains gradations within itself, and at the same time it is a member of a gradation of a higher order. The highest order gives us an entity which is the Whole. To this we do not propose to apply the term of individual, since it is not one among many, and has nothing outside it; but we have a right to describe it as an organism, since all the individuals of all the orders are contained in it, and within it form a harmonious whole of a higher order. It is the *monas monadum*.

Each individual is connected with all the others, and mirrors the Whole within itself. The particular kind of mirroring depends essentially on the nature and gradation of the individual and the Whole; that is, on the manner in which the subordinate individuals are grouped together within the higher individual, and on the degrees of relation which subsist between the individual in question and external individuals; that is, on the inner organization of the individual and the position of the individual within the Whole: in other words, on the external organization of the individual. Thus, for example, if an individual belongs to a superior organism, then it is connected with other individuals, which lie outside this organism, only in so far as the particular conditions of the organism permit; and it has a part in the manner in which the organism of which it is a member is acted upon, as a whole, by other individuals. If it is a member of a subordinate group within a particularly rich and highly gradated organism, then its relation to an external individual may be exceedingly complicated; and in some respects it may depend on the relation between the superior organism and an external organism or on a complete chain of gradations within the

superior organism, leading from one degree to the next and so to the subordinate organism.

Seen from the point of view of the subordinate organism, the superior organization of an individual of a higher degree must naturally be treated as belonging to an external organization. According to conditions in general and to the method of our contemplation we must distinguish between different degrees of external organization, and it may even happen that an inferior organism may be counted as belonging to a number of organisms of a higher order, according to the different points of view from which it is considered.

In order that we shall be able to determine the relation between two individuals, the external organization of each will have to be considered in that direction which leads to the other, and different degrees of affinity between the two individuals will be found, according to the stage of organization which has to be taken into consideration in this process.

The peculiar nature of an individual of a higher order, and of a member of such an individual, as well as its particular significance within a more comprehensive system of things, or within the Whole itself, is determined by the sum total of its inner and outer organization and the resulting specific forms and contacts.

It is internal gradation which is the main region of the organic forms. Nevertheless it is external gradation which will be the more important at the next stage of our survey. It is impossible to establish a clear distinction, first because each is dependent on the other, and next because the question whether we are dealing with an inner or an outer gradation depends ultimately on the individual form to which the gradation is being applied. That which for an individual of a higher order is internal gradation may be external gradation for an individual of a lower order: it depends altogether on the manner of looking at the two individuals.

An organized individual is different in itself from one which is differently organized, and it is also different from its surroundings. This leads us to a wide extension of the notions of difference and manifoldness, of which we could find no more than the germs at the stage of the simple individual forms. At that stage all that we had was the difference between various standpoints, and the manifoldness of irrational determinateness. Here we can add inner and

outer gradation, which offer us unlimited opportunities of rational differentiation.

This leads us to the germ of the concept of change, a concept which is related to that of becoming and of time. On the other hand, the organic individual can also remain relatively unchanged, while there is change outside it. It has certain laws of its own which arise from its organization. It occupies a certain part of space; it has form, shape, position, etc.—in short, it is a *thing* in the specific and narrower sense. This concept of the thing is an important extension of the concept of substance. At the stage of the organic forms we further reach such concepts as those of body (in the material sense), body and soul, organ, sense, movement, cause, law, and nature. It is impossible to develop all this here in detail: some reference to the interconnection of these concepts will be found in my *Wirklichkeit, Wahrheit und Wissen*.

The concept of life is particularly important. By life, in the most general sense, we may understand the sum total of all the temporal forms of relation which result from the inner gradation of the individual; in the narrower sense all that we mean by life are the phenomena which can be explained only by the assumption of an inner law in highly complicated individuals. An exact distinction between the wider and the narrower concept cannot be established, and as knowledge advances it disappears altogether. We are compelled to extend the concept of life to all the events in those members of the Whole which we look at as individuals. In doing so we are able even to apply the general rudimentary concept of consciousness to that of life; for we found that the form of relation which we described as the rudimentary form of consciousness is a general form of existence: and we shall further discover that this form of relation develops in a striking manner at the stage of the organic individual forms.

The various forms which the various gradations of an individual allow us to obtain are innumerable, and if we consider them systematically we finally reach regions of so complex a nature that a purely formal analysis no longer suffices for their exploration. Consequently we are compelled to draw more and more upon the empirical results of the various sciences and of life if we wish to have reliable guidance in the conceptual apprehension of the world and the interpretation of the results of our analysis.

It is the particular task of natural science and of psychology to throw light on the nature of the various specific relations which result from the gradation actually prevailing in the Whole and in the individual organisms; and our reliance on these specialized sciences will grow greater and greater. In so far, however, as it is possible at all to penetrate into this region under the guidance of universal concepts the analysis of the conceptual structure which was developed during the preceding stages is capable here too of providing us with formal guidance.

If we were to enter on the details of organic forms we would see that we have only now reached the stage at which the various determinations of our consciousness, which form the basis of the whole of our thought and imagination, obtain a rational meaning and form a connected whole.

Imagination without the specific senses of seeing, hearing, feeling, etc., which depend essentially on the organization of the organs of our brain and senses, would be nothing. Thought without recollection, without the association of ideas, and without the free play of ideas would be nothing, and the same is true of the whole of our actions without the higher and lower feelings of pleasure and the reverse, and without definite volition. Now all these depend on the specific organization of our body. The preliminary stages of our survey will allow us to derive no more than the most general forms of all these features of our consciousness, while the true forms of the various stages of gradation which are really decisive for each faculty must be accepted as data in that form in which we extract them from the vast confusion of extant phenomena. It is not likely that we shall ever completely understand them: but we can attempt to apprehend with a progressively more exact approximation the prime determination which is expressed in them, treating it as a kind of plenary reality. This and much more besides, this summary survey will not allow us to treat in greater detail: the question of plenary reality as the sum total of all that is actually presented to us in the form of datum, and as determinateness, in contrast to the small fraction of it that we have the power clearly to apprehend, shall be dealt with at a later point.

Out of the vast region of organic forms we will here touch briefly on one problem which is particularly important for us, since it is

connected with the distinction between the universal and rudimentary form of consciousness, and that higher form of consciousness with which we are acquainted from our personal experience and to which we give the name of thought in the narrower sense.

In the first instance this distinction is based on the faculty of recollection, and this in turn is based on the peculiar organization of the higher individuals. Without this faculty the content of the present moment would be lost to us in the subsequent moment: our only consciousness would be a consciousness of the present: we would be unable to compare, to subsume, to draw conclusions—and, in short, thought proper would be impossible. Thought and mind in the higher sense and in their general fundamental forms are, it is true, based on those forms of relation which we derived at the previous stages of our survey, and which we described as knowledge and consciousness: but the concept of the thinking being in the narrower sense depends on the relations which we discover at the stage of the organic forms.

Empirical natural science and psychology tell us that there are certain organs which must be looked at as the seat of recollection. We may consider them as extremely complicated fields of force, depending on the order in space and the complex gradation subsisting between a number of simple fields of force. If there were no such organs there could be no higher consciousness and no thought. Between a form of thought resembling ours and a momentary consciousness incapable of thought there must be an indefinite number of transitions. It is true that in spite of all the advances of science we know next to nothing of the inner details of the structure of organisms, more especially of molecules and atoms: but at any rate we can imagine as a limiting case individuals having no capacity of recollection whatever, and consequently no thought, although they do possess consciousness in the more general sense.

At the present moment we are unable to tell whether the faculty of recollection as we know it is the sole condition of intellectual perfection. We might imagine a being without memory, which always sees the Whole in One, has thus a form of thought which in a sense stands above time, and accordingly requires no memory. Such a form of thought might even be far superior to ours, and so far as we can tell it would not imply any contradiction with our natural order to assume the existence of a being of this nature. But such a being at present stands beyond the reach of our imagination and of our experience. The experience of science up to this moment

justifies the assumption that the organization of our own bodies, on which are based the faculties of recollection and of thought, is the loftiest device of nature on this earth that has been reached in the course which evolution has taken up to the present time.

We must have realized the importance of the faculty of recollection for human thought before we can fully appreciate the results of the earlier stages of the survey in so far as they related to consciousness. Until we do this we shall not be able to see clearly how much must be eliminated from the conventional concept of consciousness in order that we shall be able clearly to apprehend its rudimentary form, and before we can see the limits within which at those earlier stages the uses of such words as consciousness, imagination, Ego, volition, etc., were confined.

At the stage of the organic forms we obtain a wealth of knowledge about volition in the higher sense of psychology if we turn our attention to what natural science and psychology have revealed about that subject. I must here refer to my remarks in *Wirklichkeit, Wahrheit und Wissen*.

Among the various forms of the gradated individual we may here examine the *Community*, by which I mean a group of organized individuals, each of which as a body is independent while jointly they form an individual of a higher order, the bond between them being of a reciprocal nature based in the main on the imagination and volition of the single individuals. As examples of this kind of community we may quote the family and the state, as well as business organizations and other bodies having a common end. All these are particular manifestations of the more general form of relation which we call the organic individual—or, more generally, of "Life".

Wherever highly organized individuals are gathered together into a community, something develops in this superior community which is closely akin to consciousness and thought. Complicated effects may arise, seizing upon all or part of the separate individuals, and these effects might be treated as the manifestations of a being of a higher order possessing a soul of its own. This we may call a community soul.

Where there are well-ordered communities, the members of which are to a considerable degree interdependent, the reaction of the community on the individuals causes "ideals" to arise; that is, aims

and principles of will which the individual as member of a community tries to realize, and which have no meaning except as applied to such a community. The further course of development gives us such forms as morals, religion, and law. We reach a natural law with general principles, and a man-made law which is an attempt to approximate to the natural order while taking special circumstances into consideration.

Here once again I must refer the reader to my remarks in *Wirklichkeit, Wahrheit und Wissen*.

C. The Trans-Individual Forms

(a) World-Forms

The Concept of World—World-Forms and Forms of Intuition—Transcendent Forms of Space and Time—"World-Time" and "World-Space" as Approximate Forms—Number; Inner and Outer Infinity.

There are two other concepts which we may form in order to approach to new forms and stages of our Survey. These are the concepts of the World and of the Whole.

The concept of the World is reached in the following manner. Already at the stage of the individual forms we could measure the extent to which we are entitled to that transcendence which leads us beyond the limits of the ego-individual and allows us to realize that there is a multiplicity of individuals. Next, at the stage of the organic forms, we found an inner organization of the individual which led us to individuals of a lower order; and by the side of this we mentioned an outer organization, which is the peculiar manner in which the individual is connected with all the other individuals of the same or of a superior order. At that point, however, we were chiefly concerned with the form, as such, of the individual, in so far as this form depends on the inner gradation. It is the external gradation which leads us beyond this narrower frame of the individual form, and while we are pursuing it we are already taking the first step in the process of transcendence.

Hitherto the external gradation was merely one part of the entire gradation of the Whole—that part which lies outside any one given individual; and we apprehended it simply as it presented itself in its particular relations to this individual. Now, however, we will proceed to consider the gradation of the Whole in its totality.

From now its relation to any definite individual, more especially that which is called the Ego, will not be touched upon. Here the distinction between inner and outer gradation is lost: its importance is merely relative, and depends on the fact that we have the liberty to take any individual from among the total mass of individuals, and can thus find, with reference to this individual, an inner gradation as opposed to an outer, upon which we can fix our attention. But this distinction no longer has a fundamental importance. At this point all individuals, considered as such, are equal to one another: none is to enjoy any preference, and our private Ego in particular is to be rated as no more than one among many.

The Whole which we obtain in this manner we call World. This world is no longer the external world, or non-Ego, but the Whole considered as a trans-individual and complete organism. Our attempt then must be to draw an outline of the world from the trans-individual standpoint; and, with certain restrictions, this is possible. Imagination at this stage can render us no direct service, since it cannot but have reference to the Ego: however, we have already progressed so far in our analysis that we are able to abstract logically from this reference to the Ego; and with the aid of logic and the support of mathematics we can penetrate some distance into the trans-individual forms of the Whole. We are enabled to do this because, on the one hand, we have a means of approach to the World through the fact that it is referred to our Ego, and, on the other, we are attempting to give a picture of this structure of relations with the assistance of what is merely another manner of projection. Such a transformation of order is of the greatest value for knowledge. The kind of contemplation adopted at the previous stage may be described as essentially psychological: if so, the standpoint which we now propose to adopt may properly be described as physical.

When we are considering the world in the sense which we have here described we shall be compelled to face once again the question of the "determinateness" of the whole of this world; and we shall once again suspect (as was suggested in the previous chapter) that after all the whole order and gradation of the world in its totality is nothing other than the resolution, in terms of rationality, of that which we previously described as the prime determinateness. At this point the idea becomes more tempting than before. Those ultimate sensuous terms, which appeared to be incapable of resolution, and which stand in the foreground of the psychological stand-

point, pass into the background when we adopt our present manner of contemplation, which is of a physical and trans-individual nature. The importance of these entities is diminished and we are now unable to point to anything which, from the point of view of the World-forms, could be pronounced to be an ultimate and irresolvable determinateness. The purely physical view appears to give us none but rational determinations, which, whenever they are examined, prove capable of resolution.

The question then is this: Can the gradation of the World be pursued through an infinite series of orders in the direction of the progressively greater as well as that of the progressively less, or is there some absolutely ultimate stage? Evidently this question is closely connected with that of the external and internal continuity of the Whole. We shall not be able to answer it exhaustively, however, and we must not give free rein to our fancy: we merely mention the notion as an indication which it may be possible to take up again at a later time. Perhaps we shall approach nearer to a solution once we have a better view of the total gradation of the world than we possess at present. Our chief reliance in this attempt will be on the help given by natural science.

The transition to the concept of the *World* effects a further development in all the universal concepts which we had discovered at earlier stages of the survey. The most important results are those which affect the forms of time and space. If we wish to pursue this development further it must obviously be our aim to eliminate from the total body of the discoveries which we made at the stage of the individual forms everything that results merely from the projection of the prime datum into the individual. We must attempt to order and to describe the prime datum in such a manner that it is correct independently of any individual point of view—an attempt which can never be completely successful, since we are unable completely to leave behind the individual form of thought and intuition. On the other hand, we are not wholly without help and support. The prime datum is reflected in its totality in our individual intuition; in it all the relations of the World-Whole are revealed to us, although they are projected and, so to speak, distorted in a particular manner. The world in its unity appears to us such as our own inner gradation, and its particular connection with the outer gradation, allows it to appear, and it must be our

task to liberate it from these individual distortions. This is no easy task, and the stages of our advance will be slow and short. Nevertheless we shall approach the goal. We shall have the assistance of natural science and mathematics: the former will throw more and more light on the relations between the various gradations, and the latter, already thousands of years ago, found the roads to numerous and important generalizations which allow us to escape from the individual form. If, for example, we consider space, we find that the space of our imagination, which is individual and related to our Ego, takes the shape of a sphere having a system of polar co-ordinates of three dimensions. This applies more especially to our visual space. Our Ego, or more exactly a point of reference within our body, is the pole of the system, and we must detach the Ego before we can win a first approach to the construction of a Euclidean space with its straight lines and right angles. In fact, indeed, our road leads us much farther. We shall revert to this later.

Within the World we shall distinguish between individuals of various gradations, and perhaps—should this be possible at all—we shall reach certain ultimate individuals incapable of further analysis, which we will call prime individuals. From another point of view they might also be called prime atoms. This, however, is a concept which cannot be carried through by any process of strict analysis, and it may turn out to be merely a fiction, designed to assist the investigation, and that there are neither ultimate individuals nor ultimate determinations. Perhaps everything can be resolved into an endless chain of gradations.

However that may be, we shall have to imagine the individuals in a universal relation of reciprocal connection, by virtue of which their totality forms a continuous Whole. In its subjective form—that is, in the form which it obtains when “mirrored” in the individual—the continuity of this trans-individual whole takes the shape of time and space. In itself, however, that is, apart from its particular relation to the particular individual, this continuity will not be in every respect identical with that which we call space and time in the sensuous-empirical world. By means of transcendence we rise in a measure above our own individual form; and in transcendent contemplation those characteristics of time and space vanish, or at least become more general, which are due to the fact that a whole system of relations is being looked at

as being projected into one single Ego—namely, our own. It is practicable, however, to find these characteristics by means of analysis. If we eliminate them there remains a structure of relations which is completely abstract and cannot be imagined but can be apprehended logically. In many respects it is akin to the subject which is treated by abstract geometry.

The form of continuity at which we arrive by means of this universalizing of time and space is a trans-individual and fundamental form of the world, which in certain characteristics agrees with our temporal-spatial form of intuition. It remains to be seen how far it will prove possible to describe this polydimensional and trans-individual continuum and to penetrate its peculiar nature.

In our attempt to throw light on these general characteristics of the world-forms we shall make use of mathematics, which allows us to develop at least the quantitative aspect of the relations of continuity independently of our faculty of individual intuition, and on a basis of purely quantitative fundamental relations subsisting between the "elements". This process would allow us to draw extremely universal, and at the same time exact, conclusions. The general knowledge which the continual progress of physics gives us throws a great deal of light on the matter. But an analytical presentation of the trans-individual forms of space and time must always, at least implicitly, make our own polar space of intuition, and the time of our inner and outer experience, its starting-point.

Trans-individual space we call world-space, and trans-individual time, world-time.

For many purposes we shall have to be satisfied with approximate forms of world-space and world-time. Already above, in Euclidean space, we found the first approximate form of world-space, which differs very considerably from the sensuous space of intuition. A first approximate form of world-time might be imagined in the following shape: We imagine a continuous series equally valid for all parts of space, and we attribute to each present instant one state of space, or world-picture. This comes near to the preliminary trans-individual picture on which classical mechanics are based; and the modern concepts of force, causality, etc., are in harmony with it. If we consider that this is a merely preliminary picture and that it has many fictitious and anthropomorphic elements, it may be expected that a time will come when it is no longer adequate to the demands of scientific study. Mathematics has long been preparing the clarification of our ideas of the trans-individual

forms of continuity of the world, and the theory of relativity is a first attempt to apply these concepts to the study of physics.

In connection with the question of the prime individuals we meet the question of their number. For the time being we cannot say whether this question is meaningless or not, since, as we have seen, the concept of the prime individuals has no adequate analytical support. In connection with the concept of continuity the question of number leads into a somewhat complex series of problems, relating to the external and the internal infinity of the world. All these questions are closely interconnected. The complex of these questions in general was met already at the stage of the organic forms: here we might obtain a good deal of light on them, but many questions must also be left open, since their rational treatment goes beyond our powers. Some part of them is explained at the next stage of the survey, that of Plenitude: but there will still remain a rest which is unsolved.

(b) Forms of Plenitude

The Concept of Plenitude.

"Pole and Anti-pole" of the Analysis—The Analytical Bridge between the Poles—Plenitude and Plenary Reality.

Significance of Plenitude and Full Reality—Liminal Concepts—Apprehension of these—Needs and Pointers—Plenary Reality and the Ego—The Prime Fiction.

Our Consciousness and Plenary Reality. Significance for Physics—Influence of External Gradation—And of the Individual Standpoint—And of the Internal Gradation. Consciousness—The Indefinite Series of Apprehension and its Immanent Law—Approximate Values—Reality and Plenary Reality.

Plenary Reality and Truth—"Absolute Truth"—Relative Truth—Limits of Truth in Philosophy.

The concept of Plenitude results from an extension of the concept of the World. It is not so much empirical as due to an intellectual craving for a formal conclusion of the chain of thought. The farther we progressed in the analysis, the more the mass of details which met us grew. We found that time and space are functional infinities, and that in two respects—in that of outer and that of inner infinity. From multiple determinateness we derived the concept of a number of distinguishable entities ("points"), and could find no inner reason why their number should be limited. Next, the concept of gradation

led us to the question of ultimate entities, which again seemed to form an endless series. Time likewise may be imagined as a series infinite in two directions. At the same time it can be applied validly to reality, even if we recognize that it is no more than a subjective form of apprehension. Under certain conditions we consider ourselves to have the right to assume that to each point in an infinite temporal series there corresponds a different "world-picture".

In spite of all these different forms of infinity the Whole is ultimately one, and this fact causes us to form a new concept. By "Plenitude" we mean this Whole in all the fulness of its determinateness, but taken at the same time as One and as a Whole. What such a plenitude may be in itself it is far beyond our powers to tell, but in any case it is certain that we cannot imagine it as a Whole and One and at the same time as perfectly (or cardinally) infinite. That would be a contradiction in terms, and meaningless. The concept of Plenitude remains for us an ideal: it is a fiction, but a fiction towards which we are driven by an inner compulsion. It is a necessary concept, but we can give it a content only by means of an infinite series of approximation; and, as we shall soon see, it is closely akin to the concept of prime determinateness.

At the beginning of our consideration we made a threefold discovery in the prime form: the prime relation, the prime determinateness, and, as a connecting link between the two, the opposition between unity and multiplicity, with its specific manifestation in the form of Order and Gradation. Prime relation and prime determinateness were, so to speak, two poles, between which the whole of the analytical development takes place, and back to which all the results of it must be referred. The prime relation we described as the pole of reference of Order, since it is the simplest starting-point which will lead us to an analysis and a good order. The prime determinateness, taken as a unity, is its opposite pole.

These two poles are not separate entities: they are not even separable. In the prime form they interpenetrate and are compounded with each other, and they are mutually interdependent. A determination without a relation is as inconceivable as a relation without a determination. Mentally, however, we can effect a certain distinction between them by putting one in the background compared with the other.

We began our analysis with the pole of reference of order: the

prime relation. At the very first stage of our development we came upon determinateness; and as we advanced from stage to stage we found it more and more important. At the stage of Plenitude it occupies the whole of the foreground. Thus it appears that our development was a progress from the pole of order to its opposing pole: from the prime relation to the prime determinateness.

In the first instance the determinateness was wholly irrational. We have seen, however, that in the course of the analytical development of the prime relation, it reached a certain rational significance. At the stage of the individual forms, multiplicity became the rational connecting link between prime determinateness and prime relation. In connection with the forms of relation, multiplicity brings a certain order into determinateness; and it also leads us to the preliminary concept of an elementary (cardinal) unity and of a number of such unities. At the stage of the organic forms, multiplicity obtained an extended scope by means of the concept of gradation, and this in turn, when connected with the forms of relation, and more especially with the individual forms, gives us a peculiar kind of temporal-spatial order. In a certain sense it also renders possible a rational solution and description of determinateness, although we were unable to find a definite limit at which this process of rationalizing must ever stop.

Next we passed over to the trans-individual forms. At the stage of the world-forms we found that there was a further possibility of introducing order into determinateness; these follow on a first step taken in the direction of rational transcendence. By means of this transcendence the picture of the Whole in its immediate form—such as it is mirrored in the ego-individual—is left behind. In this manner we get rid of the distortions of perspective due to the one-sided relation of the Whole to the Ego.

All this allows us to penetrate farther and farther into the region of the prime determinateness; in doing so we are following the indications of the prime form of relation. This region, however, never quite loses its irrational nature. We imagine that our rational penetration of the prime determinateness is becoming more and more thorough, and that we are resolving it into forms of relation and gradations; but the mass of irrational data seems to grow proportionally. This contradiction we may perhaps never succeed in overcoming: we build a firm bridge from prime relation to prime determinateness, and we construct a network of roads in the region of the prime determinateness; but the foundation on which we

build remains irrational, and the field of the irrational grows wider the further the rational progress is carried.

Rationalization may be compared to an advance from the centre of a sphere to its surface. The surface is the "limit"—the irrational determinateness or reality at which the radii from the centre are severed into opposites. But the surface is a subjective element: we find it lying wherever we turn our eyes, but it eludes our gaze as soon as we attempt to progress on the lines of the prime relation—that is, by means of strict analysis. An ultimate limit does not appear to exist. The greater the distance from the centre which we have covered, the greater is the surface of reality; functionally it appears to be infinite.

All this is no more than a comparison. However, it brings out satisfactorily some of the main characteristics of the facts.

At the last stage of the survey we consider the prime determinateness, which has been reached at the end of a process beginning at the prime form of relation, and has been rationalized as far as is possible. It is functionally infinite, manifold, and arranged in a series of gradations. It is also an indivisible Unity, and accordingly we set up the fiction that the whole of the prime determinateness is given to us rationally in every direction and to the full range of an ideally perfect intellectual power, operating along the outlines given in the prime relation. When the Whole is thus rationally apprehended and looked at from the point of view of its abstract unity we give to it the name of *Plenitude*; if we look at it from the point of view of its manifoldness and multiplicity we call it *Plenary Reality*.

It appears that we can never reach to the end of these two concepts, and we may therefore ask whether they are likely to prove of any use to us.

They are clearly liminal concepts. The approach to their realization must be asymptotic, proceeding by means of an infinite series of approximations. If, however, we could grasp the immanent law of the infiniteseries of approximations this might enable us to make certain predications about the liminal term of the series.

We use *Plenitude* and *plenary reality* generically to denote the sum total of the Whole as actually presented in the form of datum, and ordered according to its reciprocal relations. This prime determination and datum will reflect the prime relation, and will do so even if we reach it by some other road than that which we are

actually following, and which begins with the prime relation. It is the prime relation which gives to the prime determinateness unity and coherence, and without these we could no more apprehend the prime determinateness than we can set out the prime relation without determinateness. Now up to this point the determinateness was seen only in its dependence on the prime relation, and we considered it in so far as it proved a suitable mode of representing the specific forms of relation: now, on the other hand, the determinateness itself in its totality comes into the foreground for us. The forms of relation throw light on it only to the extent which is necessary in order that we shall be able to apprehend it completely as a whole and to understand their particular significance.

Our aim is to have the clearest possible view of plenitude and plenary reality, and to this end we must pursue the method followed with the world-forms: we must try to free the prime determinateness from all the distortions caused by our egocentric standpoint, by the organic structure of the body which is the seat of our intellectual processes, by the specific forms of our senses, and by the individual nature of our temporal-spatial manner of intuition. In other words, we attempt to apprehend this concept in a manner which stands above senses, time, and space.

To apprehend plenary reality in such a manner is a postulate which is likely to prove incapable of fulfilment, and at this point the function of this postulate is merely to define the direction in which the course of our development has been leading us.

In such a representation of the prime determinateness and of the plenary reality of the Whole, the forms of space, time, and consciousness may be drawn upon with one reservation. This also applies to forms equivalent to them, in so far as they are particular forms in which the prime form of relation is expressed, which latter continues to manifest itself, as we know, in plenary reality. Here, however, such forms are not original forms in which the prime determinateness is presented, as was the case in individual experience; they are what may be called auxiliary forms of presentation which can be derived from plenary reality.

We need not hesitate to use such auxiliary forms—such forms as those of consciousness, the senses, space, and time—in our attempt to render plenitude and plenary reality intelligible; only it must be remembered that such attempts to render intelligible must never be allowed to bind us if they obscure the “in itself” of the datum which we are seeking to apprehend.

I said "in itself". This must not be taken in the usual sense of something which is supposed to stand behind all phenomenal forms; on the contrary it must be taken as the complete sum total of any particular datum, including all that might be called its phenomenal form, but excluding all those relative forms of order and relation in which we are accustomed to apprehend it. Above all, it must be freed from the individual forms.

The ideal then is to apprehend this Whole in the totality of its actual existence, as it is in itself: but this ideal merely points a direction. We never can reach the whole, and no imagination and no thought can fully embrace it. In spite of this it has some relation to reality, for we know that it is One, and that in a certain sense each part contains the whole. It denotes reality because we ourselves are it. It is manifested in us, and since it is One we ourselves are a specific manifestation of the Whole. And since we are the Whole, surely we should be capable of apprehending it perfectly.

This would be the case if that which we "are" were not *consciousness* in the most general sense, and if, over and above this, it were clear apprehension and understanding, intellectual order and command. Unfortunately it is plain that conscious events, that is, those which accompany memory, form no more than a small fragment of our existence: the greater part escapes our intellectual view and appears to us indirectly, in the shape of the mind-events which are grasped by memory. But even if human intellect were to attain a gigantic capacity it would never be able to embrace the plenary reality of its own ego in an active, that is, in a cognitive and ordering manner. Wherever we lay our hand a part eludes our grasp, and beyond the limit which we try to reach there will be found a region which will seem too vast for our survey compared with that which our ordering activity has succeeded in apprehending.

To this extent the totality of the Whole (and equally that of the Ego) can never be completely imagined, and the concept of it which we form in spite of this fact must therefore be a fiction for us. But this fiction is reached through the operation of a law which forces us beyond every barrier. It leads us to a functional infinity, the regular inner structure of which we are very well able to comprehend. Plenary reality is a fiction, but it is a necessary fiction, the prototype of which is contained in the prime form itself: it is the *prime fiction* of our cognitive faculty.

This is one of the main ideas developed in my *Das Vollwirkliche und das Als ob*. There I showed that the prime fiction of "plenary

reality" is the original source of all the fictions and hypotheses which are essential to science as well as to life in general. Hypothesis and fiction alike are simply tentative and more or less irrational steps towards plenary reality. The main difference between them is that a pure fiction is content to resign its hopes of establishing contact with the pole of unity and of obtaining a perfect rationalization, whereas a hypothesis tries, albeit unsuccessfully, to reach complete or partial rationalization. In practice both are often combined, so that in certain individual cases it is not always possible to effect a clear distinction.

The counter-pole of the prime form of relation or pole of order is a fictitious Something which can never be reached. This latter, again, contains that something which can never be fulfilled or completed, but which nevertheless we make the substratum of all our ideas, treating it as a plenary reality which lies behind them. This irrational plenary reality, treated as trans-individual counter-pole, is closely akin to Kant's *focus imaginarius*—which is in the main the same point to which Kant refers at another place in his *Critique of Pure Reason*, when he speaks of a concept having an "objective but indeterminate" validity of which he further says that it has an asymptotic meaning, but that, as concept, it is a fiction.

Before leaving this subject I would recall that I said above that we ourselves are plenary reality. Each individual "mirrors" in itself the totality of all the rest and is a repetition of the Whole from the individual standpoint. It is this fact which permits us, as individuals, to apprehend the Whole, however imperfectly, in spite of the fact that we are no more than single points within the Whole. This "mirroring" is not a merely general and abstract concept: it has a profound physical meaning which I have attempted to describe in detail in my *Das Vollwirkliche und das Als ob*. Here I propose to add a few remarks in the same sense.

"I" am a gradated individual. The frontiers of "me" in the narrower sense depend on my body, and upon it as a whole my consciousness depends. The frontiers of my individuality, however, have a wider scope, and the Ego (or myself), as individual, extends as far as the sphere of action of my body. Further, all that stands in a relation of interaction with my body is mine. It is true that all this "external" world is loosely related to my body; but this relation is governed by laws, and is one which cannot be destroyed,

and it itself differs from that which is "in" my body only by degree. That which acts on my body from outside exerts an influence on me as much as does any part of the body itself.

In principle it is indifferent whether the light-waves of a sun-ray which act upon my eye are looked at as a part of the eye or as something external. If no actinic waves penetrated my eye the eye would be valueless, and my consciousness would remain empty as far as sight is concerned. My consciousness is determined by the system consisting of actinic waves plus nerve cells.

Now every thing that is in the world acts upon my body, my senses, and the state of my consciousness in some way or another, and consequently the "Whole" is a part of "me" in the wider sense. My body, in the wider sense, extends throughout the Whole, and I, and everybody, can fairly say, "I am the Whole".

Accordingly, if I can say of myself that I am the Whole, surely I may hope that a time will come when I shall be able to apprehend, and to see this plenary reality as One. I have already pointed out the cause of our present inadequacy, which is, that our conscious imagination and thought can apprehend no more than a tiny fraction of the whole: the greatest part is lost to memory and to our intellectual processes. It might indeed be asserted that the Whole must surely be reflected even in the smallest fragment; but I have already replied that this reflection is indirect. The question now arises, What is the meaning of *indirect* for us?

We are gradated individuals, and as such we are held fast in a narrow compass of time and space: more especially, as organic individuals we are tied to the body and its inner and outer relations. That which lies distant in space can be drawn into the sphere of clear and conscious intuition only by means of these outer relations; and that which is distant in time only through those members of an evolutionary series which lie nearest to us. The clarity and accuracy of this kind of conscious apprehension depend on the kind and stage of gradation which we have reached with respect to the objects which we comprehend.

Thus it comes about that while our sense-perception gives us a complete picture of the Whole, the picture is one which is seen from a one-sided standpoint. The pictures which we obtain are utterly distorted, and some objects appear close and bulk immensely great, while others appear microscopically small, or immensely distant, or unattainable except by the most devious approaches.

If we were capable of supra-individual apprehension none of

these objects would be either close or distant, none would be too great or too little for our faculty of apprehension, nor would there be any past or future. The extremest multiplicity could be embraced at a glance, and all data would be immediate, and given at the same time and in the same manner. There is a temptation to call this manner of apprehension absolute: if we could imagine the empirical Whole freed from its dependence on the individual subject, and if we could apprehend it "absolutely" and in a supra-individual, supra-temporal, and supra-spatial manner in the totality of its fulness, then this would constitute the apprehension of plenitude itself.

But we do not possess such an absolute and immediate faculty of apprehension; and the cause of this is not only the external gradation which links us to the world, but our inner gradation too, and more especially the manner in which higher and conscious thought comes about.

The perfection of processes of apprehension depends in the main on the structure and functioning of a certain organ which receives and connects the different impressions of the senses, and which, further, partly retains the traces of previous impressions and allows them indirectly to enter into action. This organ is the brain with its ramifications and subsidiary organs. The perfection of the structure and of the functioning of this organ determines the perfection with which we can succeed in a deliberate attempt at producing a representation of the complex of the Whole, using the specific forms of sensual perception which are at our command. In the construction of this picture we cannot make use of all that is manifested in our ego, nor even of all that lies latent in our brain and our senses, for there is much that does not enter into consciousness, and consequently cannot be held fast by memory nor be worked upon by reflection. It is true that there is nothing that does not find its manifestation in our consciousness in some manner: this much is brought about by the universal reciprocal interrelation: but we are not free to use everything as material in our intellectual structures.

The brain allows us to have an intuition and an intellectual apprehension of the world in its complexity. The manner in which this is brought about depends on the exceedingly complicated internal structure of this organ, and on its reciprocal relation to the other parts of the Whole, a relation which has many gradations. It is the nature of the inner and the outer gradation which deter-

mines this reciprocal relation, and it depends on this whether we have a more or a less clear view of the relations, and whether we succeed in holding them fast, comparing, ordering, and commanding them sufficiently to be able to communicate them to others. Thus we see that the "mirroring" of the different parts of the Whole within our consciousness may be of varying validity for different parts and may be distorted in accordance with the particular nature of the gradation of the reciprocal relation.

Our clear conscious apprehension, and our faculties of intellectual manipulation and valuation, can operate on no more than a tiny fraction of the Plenitude which is manifested in us. This is the reason why we are not omniscient in the higher psychological sense, in spite of the fact that the Whole is completely mirrored in us. Our conscious thought is based on our bodily organs and on the peculiar connection with the Whole which they permit to us: it has to rely on the actual structure of the senses and on the faculty of recollection, which in turn is extremely limited, and is localized in the brain. With these restricted aids it remains unable to embrace the fulness of reality in a consciously ordering effort: the fulness of reality would require a "world-mind", intuiting the whole order immediately, to contain it: we, bound as we are, can never view the Whole completely or in a manner equally valid from all points.

Nevertheless even our limited intellectual apparatus suffices to seize a fragment of it. The immanent laws of the Whole are active in even the smallest fragment according to the manner of our gradation, and consequently the little that we can hold fast allows us to commence a series which leads us from Here and Now to the distances and depths of space and time. It is true that the series cannot be completed; nevertheless the picture which we thus obtain must reflect the immanent laws of the system in such a way that a prudent progress will allow us to develop a series of wider and wider temporal and spatial stages, just as a fragment of an infinite mathematical series may reveal the law governing the whole of the series. The process by which we comprehend the Whole is a series, and this series allows us to apprehend at any rate the most general characteristics of the immanent law on which the series is based. We can further develop this law so that it becomes clearer and clearer. This is also the method of natural science, which attempts by an infinite series to lead us up to plenary reality.

The multiple determinateness of the Whole is manifested in the

prime form. We cannot apprehend it in its fulness, such as it really is: and this is necessary in order that clear and conscious thought, which is based on memory, shall be able to seize on this Whole in its fundamental outline and at the same time in the fulness of its manifoldness. But although this is impossible we must form at least the abstract concept of such a totality of multiple determinateness, that is, of plenary reality and of Plenitude; for the Whole is One. An intuition of this multiple determinateness in its totality, that is, as plenitude and plenary reality, will always lie beyond us.

In itself the concept of plenary reality contains no contradiction: as has already been said, it is formally a liminal structure which can be approached in imagination to any degree. As a complete Whole it cannot be attained, but it can be approached from the egocentric standpoint in a series which can never be completed: and whenever we attempt to describe the Whole at all exhaustively we find ourselves compelled to enter on such a series, and we find that every term within the system leads us to another. However great are our discoveries, each discovery seems to be the source of new ones, pointing to a fresh number beyond. We reach a functionally infinite series, the law of whose formation is discovered by slow and groping stages.

Plenary reality is what may be called the liminal value of this series. At each stage of the series we have a value which can never be more than approximate, just as in natural science the laws of nature are merely approximative concepts. However wide the applicability of these natural laws may be in fact, natural science takes them as merely preliminary, and is always ready to render them more complete, accurate, and universal. It takes them as the preliminary version of plenary reality, which is its ultimate—and unattainable—goal; but behind this version it suspects in each instance a better and more perfect reality.

All that we call real is a merely temporary substratum of plenary reality, a projection, so to speak, of plenary reality into a plane which we can reach more easily; or again, a more or less adequate copy or reflection of plenary reality.

Plenary reality is the last conceivable stage to which our concept of the world, as we left it at the last stage of the survey, can be carried: accordingly it is the final term of the series of our development.

We have thus reached the concept of plenary reality and are now in a position to define the meaning which we intend to attach to the much-debated term of "truth". The question here becomes urgent, for we have already associated the notion of fiction with that of plenary reality; and the discoveries which we have already reached admit a satisfactory solution of the question.

The word *truth* has many meanings, and we cannot at this point treat it exhaustively: we can, however, describe the chief meanings which are commonly attached to it.

1. The concept of truth can have a subjective and an objective meaning. It can further be taken absolutely (as something independent) or relatively (as something dependent). In its widest sense (the absolute) and in its objective meaning truth is equivalent to plenary reality.

In the subjective sense absolute truth would be an exact copy, or representation, descriptive as well as intuitional, of plenary reality with all its determinations and their reciprocal relations.

Such definite concepts as we possess, and such clear intuitions as lie ready in the memory, will never allow us more than an incomplete grasp of plenary reality, which for us is something infinite, and hence for ever unattainable. Accordingly absolute truth is of that same fictitious nature as plenary reality.

There is another and narrower sense in which we speak of absolute truth with reference to a group of things or phenomena belonging to our empirical world, by which we mean, subjectively, the representation, descriptive and immediately intuitive, of all the determinations and reciprocal relations belonging to this group, the representation corresponding to plenary reality. However limited such a group may be, the Whole is reflected in it, and a perfect representation of even the smallest group would be possible only if we were able to describe exhaustively the group as a reflection of the plenary reality of the Whole. Such an ability we lack. Thus we are no more capable of "absolute" truth with regard to the least part of the Whole (which would be equivalent to a complete and perfect understanding of this least part) than we are capable of apprehending absolute plenary reality.

2. Although absolute truth is infinite and unattainable, it does not follow from this that we cannot approach truth in an infinite series, and that we cannot lay hold of certain of its most general and most primitive characteristics in a perfectly exact manner,

which characteristics we can then pursue for a long distance in the direction of plenary reality until our forces fail us. In this way we are led to the concept of "relative" truth.

Relative truth is a representation or an apprehension, descriptive and immediately intuitive, and as nearly perfect as possible, of all the determinations, reciprocal relations, and interconnections within a given group of things or phenomena: to which statement must be added the qualification that the whole plenary complex of relations need not be discovered, and that those relations suffice which can be discovered in a limited field of the empirical world which lies open to our mind or our senses. We demand of relative truth that it shall fit into our total experience simply and without contradiction: it is a practical structure, adapted more or less successfully to the actual facts, and it is the only kind of truth with which we are concerned in practical life. It is also the only kind of truth which is available to the various sciences.

Philosophy looks for truth, not in relation to any given group of things or phenomena, but with relation to our experience as a whole. Its aim is to take the widest-spread complex of facts and to apprehend it as closely as possible, and to set it out in the best possible, simplest, and most adequate order. It can move for a short distance along the tracks of the prime form and can throw some light on certain of its most general characteristics: but as yet it cannot hope to attain an equally valid understanding of the more closely defined details of experience.

These details are the particular object of the different sciences, which they attempt to understand as correctly as possible. With regard to the understanding of those general principles which are the object of philosophy, the sciences have certain self-imposed limits: they start from fundamental concepts which they treat as given irrationally, and which in fact are exceedingly complex; and they make no attempt at all to understand such universal concepts as thing, substance, being, space, time, and the like.

It is the region which philosophy makes the object of its study which is taken for granted and as axiomatic by the sciences, so that they exclude it from the scope of their studies: and to this extent philosophy aims at the rationalization of the irrational systems of axioms and of the universal concepts which are used by the different sciences.

B. The Converse

Meaning of the *Converse*—Natural Philosophy—Relation between Original and Converse. "Correspondence"—Examples of Converses—Plenary Reality used as Hypothesis.

In *Das Vollwirkliche und das Als ob* I have shown, among other things, how the concept of plenary reality can be made the starting-pole of another and a peculiar world-picture. This picture is akin to the analytical picture which was sketched from the pole of unity. To this new picture I gave the name of Converse.

The pole of unity is the starting-point and the focus of a strictly rational apprehension of the Whole in its totality. Its counter-pole is plenary reality—the unattainable and fictitious goal of the study of nature and of the different sciences. The Converse takes this counter-pole for its starting-point and leads us far into the peculiar regions of these sciences. It begins by developing the most general axiomatic concepts on which these sciences are based: the concepts result from the universal concepts of our analytical system, and the process consists of imputing plenary reality to these concepts.

In the Original the rational element predominates: in the Converse the irrational plays a part. At the same time, however, the Converse is penetrated by the light which flows from the rational Original. Consequently the main characteristics of the Original are met with again in the Converse.

The Converse gives us a kind of natural philosophy. This natural philosophy has the advantage that it shows us not only its connection with plenary reality, but is also connected with the analytical Original, and thus reveals the uniform thread which runs through the complex relations and leads to the pole of order. The sciences are unable to do this. At some point they stop, where they cannot penetrate farther with the methods of investigation which they possess; and none of them penetrates into the region of the universal concepts and their correlations. Space, time, motion, number, thing, cause, effect, force, matter, consciousness, and others are all, or at least most of them, treated as irrational and ultimate data whose internal nature is not discussed.

The fundamental concepts of the sciences are not turned towards the pole of order like the universal concepts of our natural order: the general attitude of the sciences brings it about that they are treated as empirical data, and are referred to the counter-pole. At the same time they derive their inner force and validity from the structure of relations which we have been tracing from the pole of

order. The sciences, on the other hand, do not admit this structure to their considerations, and in place of it they accept irrationally and axiomatically those fundamental forms and principles which, supported by our analytical structures, are discovered in our Converse. It is this fact, and the fact that plenary reality is employed as a hypothesis, which constitutes the reason why the sciences, from the epistemological point of view, are fictitious.

Naturally there is a considerable divergence between the Original and the Converse in their whole nature and meaning; at the same time they "correspond" with each other to this extent, that they agree in certain formal main characteristics, whereas other of their characteristics are opposite to each other.

Like the Original, the Converse can be dealt with by analytical means up to a certain degree. It leads us up to a number of new and peculiar concepts, which are what may be called the physical counterparts or reflections of the more abstract form revealed to us in the Original. There is also an intermediate region in which the concepts of the Original and the Converse pass over into each other to such an extent that in the main they make the same assertion from different standpoints.

The Converse also displays certain of the more universal forms of relation—for example the law of the mirroring of the Whole in each of its parts. I have explained at length the importance for natural philosophy of this law in the work already mentioned. In the analytical Original, consciousness as we find it at the stage of the individual forms corresponds to it. Further, we find the mechanical law of reciprocal action (the law of action and reaction) which corresponds to the analytical concept of reciprocal dependence.

In the region of the Converse we form the physical concepts of matter and force, which are analogous to the analytical concepts of substance and action: of body and soul, of life, and so forth. At this point the concept of the cosmos arises, which is akin to our world-concept, and that of god, which is akin to our concept of plenitude. For the sciences all these are fundamental concepts.

So much for a description of the system proper. In the following chapters we shall meet with a good many further details, and we shall then be able to form a good idea of the variety and richness

of the system which we have discovered, and of the capacity for development of the whole; of the liberty of movement over the whole system which we obtain, and of the applicability of our new discoveries in the solution of further problems. Until the fruitfulness of the fundamental order is understood, and we can see how far it will take us in the task of our investigation, we shall be unable to form a just estimate of the value of the results which we have already reached.

C. Chains of Concepts and Transformations

I. CHAINS OF CONCEPTS.

First Example: The Chain of Consciousness—1. Fundamental Forms: The Fundamental Triad of Consciousness—Manifoldness—2. Specific Forms: (a) Unity-Multiplicity—(b) Reciprocal Dependence—(c) Inner and Outer—(d) Amalgamations of these Forms—(e) Forms of Continuity—Organic Forms.

Second Example: The Chain of Continuity. Form of Knowledge—Form of Time. "Continuation"—Inner and Outer Time—Separate Coexistence—The Second Dimension—The Third Dimension—Becoming—Faculty of Recollection and World-Picture—Trans-individual Continuity—Euclidean Space. Its Dependent Nature—World-Space—World-Time—"Magnitude". Its Dependent Nature—Universal Forms of Continuity—Universal Knowledge—Universal Time—Universal Space—"Idea". World-Order.

2. TRANSFORMATIONS.

Meaning of Transformations—"Systems"—Relativity—Comparison with Algebra—Comparison with Analytical Mechanics—Relativity of the Geometrical Expression of Orbits of Movement—Analogous State of our Derivative Systems.

Relations between the Transformations and the Historical Philosophical Systems—Comparison—Fundamental Order as Guide—Fundamental Order and Intellectual Power.

"Relativism"—Theory of World-Views—Their Limitations—Philosophy as "Art"—Unity of World-Views—Modern Attitude with regard to Relativism.

I. Chains of Concepts

We have now reached a general view of the world. This view can be made sensibly deeper if we survey the sphere of universal concepts in certain other ways than that which has hitherto been the guide of our analysis. Among these the "Chain of Concepts" is a very instructive manner of contemplation, and the same is true of "Transformations".

At the first stage in the course of our analysis we found the germ of certain universal concepts. At each subsequent stage we

met the same concepts, and these developed from stage to stage until they reached their full significance. Now we might make the attempt to pursue the development of a single universal concept in a direct line from its first germ to its final development. For example, we might take the concept of Substance, and would then have to look at the whole of the analysis from one point of view—that of the development of this concept. At the same time we would have to throw light on all the lateral connections which lead from this concept to others; and even if it were our aim completely to elucidate no more than one single concept in this manner, we would be compelled in the end to investigate the whole system of concepts, since all the universal concepts are closely interconnected.

The peculiarity of such a method would consist in the fact that one single concept, for example that of Substance or of Causality, would be made the central concept, everything else appearing subordinate and being referred to it. To such a special presentation of the concept I propose to give the name of a "chain". In a chain certain elements can be emphasized and others neglected as required, more than is the case in the general analysis.

If we form the chain of causality we shall find *reciprocal dependence*, *reciprocal action*; next, through amalgamation with the concept of substance, *action*, as the germ of the concept of force; then, the germ of the concept of *cause*, *becoming*, *time*; then, in connection with the organic forms, *force*; and finally the *temporal unfolding of the Whole*. Relatively to these links in the chain all the other concepts which we have developed in the preceding chapters would be merely subsidiary concepts. If instead of the chain of causality we choose that of *thing*, *ego*, *space*, or *time*, or any other, we shall always find the same general structure; but the point of reference in each instance is in a different place; we obtain different systems representing the same whole. They are what may be called different versions of the same fundamental structure with different systems of co-ordinates. Each such version will bring us fresh light, or at least will throw new light on what we already possess.

The first example which we will take is the chain of consciousness. We intend to give at least an outline of the intellectual systems which have become historically important in connection with the concept of consciousness. In our terminology we shall follow the historical expressions as far as possible.

To begin with we shall revert to the Prime Form. The first shape under which we found it was that of the prime form of relation. Thence we derived three special forms: the unity of the world of data, the cleavage into opposites, and reciprocal dependence. This triad has proved important in the history of philosophy in different ways for the analysis of consciousness. Thus we discover it as a fundamental form under the designation of thesis, antithesis, synthesis. Here thesis is taken as the unity of the world of data, antithesis as the cleavage into opposites, and synthesis as reciprocal interpenetration or coexistence, or as interdependence, as with Fichte; or again the thesis is taken as one side, antithesis as its opposite, and synthesis as the higher unity of the two, as with Hegel.

Essentially the same triad in a narrower form may be found in the three fundamental axioms of logical thought: the law of identity (self-identity of the sum of data, $A = A$, corresponding to the thesis), the law of contradiction (the principle that two opposites exclude each other, or non- A does not $= A$, corresponding to the antithesis), and the law of the sufficient ground (reciprocal dependence, corresponding to the synthesis).

Further, the prime form was presented to us in the shape of prime determinateness. In a narrower form this was equivalent to the manifold determinateness of the sum of data. Now all that is datum is of a uniform nature, and consequently the manifold is united into a unity. This gives us the opposition between unity and multiplicity, unity and manifoldness, and the One and the Many. In Kant's version of the forms of consciousness this opposition plays a particularly important part.

These are the chief materials to be used in a preliminary description of the specific forms of consciousness.

In the first instance we recall the forms of relation which enabled us at the stage of the essential forms to speak of the germ of the concept of consciousness. We further recall how at the stage of the individual forms this concept was further developed, giving us specific manifestations in the shape of the concepts of subject-object, Ego-non-Ego, and possession and the object of possession. Although this need not be repeated here, I wish to give some brief indications of the part which the above-mentioned fundamental forms have played in the historically important attempts at discovering the structure of consciousness.

(a) The general form of relation called Unity-Multiplicity is, s

to say, the connecting link between the prime relation and the prime determinateness (or multiple determinateness). In the individual form we find that it, together with the determinateness, is drawn entirely into one side, that of the "individual". In this particular projection this form of relation, in which a particular emphasis rests on the unity, has led to the formation of concepts such as the unity of self-consciousness and the transcendental unity of apperception (as with Kant) or Ego (Kant and Fichte).

If in the same form of relation the emphasis is laid on its multiplicity, then we can find its counterpart in the Kantian "manifoldness" which is the object of our "intuition".

(b) Already at the stage of essence reciprocal interdependence led us to reciprocal determination and action, and hence to the opposition between action and reaction. If this opposition is referred into the individual the form which it takes is that of activity-passivity. Passivity (or suffering) is the individual manifestation of "reaction" referred inwards. For the analysis of consciousness this opposition is important: in a somewhat narrower sense Kant gives to it the name of "spontaneity-receptivity".

(c) The one-sided projection of all the forms of relation into one and the same side gave us the opposition between inner and outer, an opposition which was based on the fact that the one side has a relation, which can in no way be removed, to its counter-side. The opposition was found to be a double relation, immanent in consciousness, and was of fundamental importance.

(d) Now the different forms are not independent of one another. They are separate manifestations of the same One, and they complement one another and frequently overlap. In this way new concepts are formed. Thus the form of unity with multiplicity is amalgamated with that of activity-passivity, and the manner in which they are amalgamated is such that on the one hand activity and unity are closely related, while they are faced with passivity and manifoldness (multiplicity), which are related to them as opposites.

This double form of unity-activity and multiplicity-passivity is further compounded with another form, that of inner and outer. The latter, as we have already seen, dominates every analysis of consciousness. In this compound form Activity, Unity, and Inner form the one side, and Passivity, Multiplicity, and Outer, the other. The group of the Inner (activity-unity), when taken as one and as the opposite of the other group (that of outer), leads us to

the concept of *uniting*, or, in Kantian terminology, to synthesis, this latter being taken as an original form of consciousness or thought.

If activity-unity is attached to the Inner ("Ego", Subject), and if in this process it is taken in its relation (or application) to the multiplicity (which is given as passive, or as receptive) of our consciousness, then we are led to the form of consciousness which we call *concept*. Taken generally or in its fundamental sense it is called category in the Kantian terminology. A single word might be used to denote the whole of the functional complex of inner-activity-unity-concept: the word which Kant uses is understanding. The opposite complex of outer-multiplicity-passivity-intuition is called Sensuousness by Kant. With Kant the relation between sensuousness and understanding is further amalgamated with the relation between relations and determinateness, with which we have already dealt in detail above. Understanding appears as the faculty of relations, while the determinations which are actually given belong to sensuousness.

Determinateness is multiple, and at the same time has a unity: it has a twofold relation, inwards and outwards, and the unity of determinateness is the same as that of the "concept"; and consequently this unity of the concept, together with the manifoldness of the world of data, can be projected outwards, a process which takes us to the "object" of our intuition. The "object" is a complex structure, and if we eliminate from it the unity (which has been projected outwards), and place it in opposition to the unity of the Ego, which we have taken as being the same as Inner, then we reach such concepts as "non-Ego" (as with Fichte) and "thing in itself" (as with Kant).

We saw above that the individual form in its first shape is solipsistic. Therefore, unless we wish to effect a transcendence which will take us beyond the individual form (and thus would be equivalent to a kind of constructive self-dissolution of the Ego), this external pole of unity appears as a merely virtual or imaginary point, a *focus imaginarius*, which in fact is no more than the reflection of the unity of the Ego (as with Kant).

(e) To this chain of concepts it remains to add the forms of continuity as seen from the standpoint of the individual. They take us to those forms of space and time which we know from our own experience as forms of consciousness or intuition.

It will be recalled that the form of oscillation, which was recog-

nized as the first germ of continuity, was found at the stage of the pre-individual forms. Out of this, at the stage of the essential forms, the most universal characteristic of the form of knowledge developed, and this was found to be the first specific manifestation of continuity. Thus we reached the germ of the notion of subject-object.

At the stage of the individual forms the opposition of unity and multiplicity was amalgamated with this concept. We reached further manifestations of the form of suspension, and these also entered into the form of consciousness. Thus we reached those fundamental categories on which ultimately the forms in which we intuit space and time are based.

At the stage of the organic forms we found the basis of the faculty of recollection and of the association of ideas; we saw their importance for higher thought, more especially for the formation of concepts and judgments. We also found those sensuous forms which cover all the imaginative processes; and we understood the importance of all this for the further development of the individual forms of space and time. Our road then took us further to the feelings of pleasure and displeasure and to volition. With all this I need not deal in detail: to space and time I shall shortly revert for separate treatment.

The above, then, are a few hints for the analysis of consciousness into the form of a chain, based on those concepts which have attained historical importance.

We will now take a second chain—that of continuity. Up to this point we have treated the concepts which belong to this matter in a very summary manner, because we wished to avoid obscuring the course of our analytical investigations by a discussion of the complexities of the case. Further, a discussion of the connection between the various forms of continuity can be brought about more easily if all the forms are pursued through all their stages in an unbroken chain. This, in summary manner, we now propose to do.

The germ of the concept of continuity was found at the most universal pre-individual forms. It was closely connected with that special manifestation of the prime form of relation which we called the form of oscillation. At the second stage of our investigation we once more met with the form of oscillation: at that point it was a member of the more complex systems which result from the form

of essence. The fundamental structure of the form of knowledge was there derived from it.

The latter was the last and the most comprehensive of the three forms which we found in the propædæutic system which was meant to provide a provisional order for our experience. In the analytical system we find that it is the first specific manifestation of that more general form of relation which we described as the germ of the concept of continuity. The other forms of continuity occurring in the propædæutic system—time and space—can be treated as narrower and more definite derivative versions of the form of knowledge thus defined.

As yet, however, we have only the germ of the form of knowledge: it belongs entirely to the region of the pre-individual forms. The manner in which it changes until it has become the form of knowledge in the narrower sense follows in part from what we already saw in the previous example, which dealt with the series of consciousness. Hence we need not here treat the form of knowledge as a manifestation of the form of continuity.

The form of time is a special manifestation of the form of oscillation and the form of knowledge. The form of time results from the one-sided projection outwards and inwards of the form of oscillation. At the stage of our survey where we were dealing with the essential forms, the projection outwards of the form of oscillation was not of far-reaching importance, and at that stage the projection inwards too displays only the most universal characteristic of the form of time. I now give a description of this characteristic.

The form of oscillation implies the mutual positing of the sides and the compulsory transition from the side of essence to the opposite. This transition to the other side involves a return from the other side and a positing of the first side. This renewed self-positing of the side of essence is distinguished from the first positing by the elementary oscillation, which thus is equivalent to an elementary and continuous severance of the two positings of essence. At the same time, however, the two positings are taken as positing the same essence: this comes about by means of that total projection which we called "essence". This amalgamation of *the separate* with *identity* (or, conversely, this positing of a single One as separate *entities*) we call the *continuation* of essence. Thus the one-sided projection of oscillation into essence takes the form of a linear continuation of essence. This gives us the first germ of the concept of time.

It is easy to see that this development constitutes an important addition to the concept of Substance, since the identity of essence in the flux of time is a chief characteristic of Substance. Further, it is easy to see how the concept of continuation contains within itself the germ of the concepts of growth and perishing, and of being and not-being, since a continuation is the repeated positing of the same entity, together with the negation of the previous positing whenever the transition to the other side is effected, this transition being the condition of the renewed positing.

Now at the stage of the individual forms all these facts obtain a fresh significance. The concept of time develops further. The contrast between the unity of the Ego and the multiplicity of the non-Ego lays in the first instance an additional emphasis on the opposition between this Ego and non-Ego; the significance of this Ego as an independent entity, and its temporal continuation as a member of the Whole, gains additional importance. On the other hand, the non-Ego too, as a multiplicity of "points" all of which are inter-related with one another, is of particular importance for the concept of time. In the same manner in which we must imagine the Ego as continued temporally, we must also imagine the non-Ego as a Whole, which stands over against the Ego, and this Whole we must imagine as having temporal continuation. To the continuation of the Ego we give the name of *inner*, and to that of the outer Whole, that of *outer* time.

The Outer consists of a number of points, which severally are treated as individuals; and between these entities there subsists an oscillation of the same kind as that which subsists between the Ego and the non-Ego, with this sole difference, that this oscillation does not subsist as between opposites but as between multiple terms; nor has it one privileged side into which it must be projected: all the sides are of equal validity. As such they are in fact taken: at any moment all the points of the Outer are "posited" in that point of the present in which the Ego continues itself. Thus we have two forms of oscillation: the individual form out of which emerges the temporal continuance of the external points, and another form of oscillation (or continuity) which amalgamates with it, and which exists within the Outer. The points are posited as subsisting separately from one another.

This external continuity is not of a linear or serial nature. The characteristic of linear continuity is that in each element not more than two sides are posited as polar opposites, and only one direction

(having two senses) is determined. In the Outer, on the other hand, we have a multiplicity of points, or sides, each of which is the condition of the other, and consequently a multiplicity of directions. The element of time has one direction only: in each continuity-element of the Outer we find at least a second direction, or dimension. The question now is whether we are compelled to assume more than two dimensions.

A second dimension suffices in order that we shall be enabled to determine an infinity of directions. The best example to show this is that of the two-dimensional plane, in which we have not one two-sense direction but an unlimited number, in contradistinction to the one-dimensional straight line. Unless, therefore, considerations of a different order lead us to a continuity of an altogether different kind which combines with the continuity of the Outer such as we have found it to be up to this point, so long the form of relation of a two-dimensional continuity having an indefinite(infinite) number of simultaneous points would be tantamount to the Outer.

Now the whole of this external multiplicity of individualized points is not merely in a state of interrelation; each point at the same time is in a state of "oscillating" relation to the Ego. This relation is a continuity of a wholly different order. It applies to each single point of the Outer, and accordingly it combines completely with the two-dimensional continuity of this Outer. Hence result certain particular relations: of these the following are the most important for us. First, each point has a continuity-relation by means of which its direction towards the Ego is determined; and secondly, all the points of the Outer among each other are placed in a certain relation which tends towards the Ego. Here, of course, this applies only to the single Ego, and is a wholly individual matter. Thus the two-dimensional Outer has a third dimension for the Ego: the dimension of depth.

These facts give us the germ of our idea of space. They depend on the individual, and this is expressed in the fact—among others—that in our sensuous intuition the Ego always appears as the pole or centre to which this idea is referred. On all this I can no more than touch here. But one fact is clear—the exceedingly close connection between the forms of knowledge, space, and time; and we perceive the deeper reason for the peculiarity of these three forms of continuity. We further see how these forms combine with one another, and how, if considered from a supra-individual standpoint, they merge in the prime form of relation.

We have here been considering the prime form only from the side of the prime relation and of unity-multiplicity. If we further take into consideration the prime determinateness, and gradation, and if we add the concept of time, then we reach the concept of the difference between entities—the fact that there are states of the Whole separated by intervals of time; which leads us to *becoming* in the narrower sense. Further, we are led to the temporal evolution of the Whole and to causality as used in natural science, and to the concept of spatial movement as a particular manifestation of temporal change.

There is another matter, however, which among these forms of continuity plays an important part—the ideas of the Whole and of becoming which we build up on the fact of our faculty of recollection. This faculty is based on special facts which become clear only when our survey reaches the stage of the organic forms. Recollection enables us to place side by side and to compare events which are separated in time, and it is only thus that we obtain an idea of past and future and of a temporal series, and perfect our concepts of change, becoming, and causality.

We can now pass over to the trans-individual forms. These give us some further important forms of continuity. If from the picture of the reciprocal relations which an organic individual possesses we abstract all that is derived from the fact that it is an individual, then all that remains of the form of knowledge in general is the form of oscillation. On the other hand, the form of space and that of time provide us with important specific manifestations of the form of oscillation even at the trans-individual stage. In order to discover these we do not commence our process of construction from the form of oscillation; on the contrary, we break up our previous construction, beginning from the forms of space and time such as they are at the present stage of their development.

In the “world-form” our picture of space is modified to this extent, that we no longer imagine it referred to the contingent relative position of our Ego, but imagine and describe it as referred to a system of co-ordinates independent of the position of the Ego. At the stage of the World-forms we attempt to objectify space—a goal which we can never quite attain.

The first and simplest approximation to an “objective” view of space consists in Euclidean space, which is based on the concept of the straight line, parallel straight lines, and the right angle. The transition from the space of our individual intuition to the world-

forms brings with it another change, which is due to the fact that the space of the world-form takes our Ego as a part of the Whole equal in validity and in kind to the other individuals of the Whole.

Euclidean space is simply a particularly apt order of our idea of space; it is one among others, and we are compelled to adopt it when we attempt to eliminate the reference to the Ego from this version of space. Euclidean space is the foundation of the whole of Euclidean geometry.

The space of our imagination, such as we found it at the stage of the individual forms and as we know it from experience, is never Euclidean; but, apart from certain peculiarities due to our faculties of sensuous apprehension, it stands in a definite mathematical relation to Euclidean space. This applies more particularly to visual space, which can be derived from Euclidean space by means of a kind of central projection, although this statement too is true only with certain reservations. (Thus our sight, for example, depends on what we call the velocity of light.) In this way the question of time has its own peculiar influence on the question of empirical space.

This difficulty, however, as well as others, is due to the fact that we take the space of intuition, which is the only space with which we are empirically acquainted, as our foundation when we make the attempt to account about "world-space"—that is, trans-individual space—and that in this process we take over a good many elements which are proper to the space of intuition, but cannot belong to "world-space". Thus all that we have at this point is a collection of approximate world-forms, which, however, in spite of the fact that they are approximate, throw much light on our subject. They are particularly important for the various sciences, especially for mathematics and natural science.

A strict method for the discovery of pure trans-individual space would imply a complete elimination of all that is reached solely as a result of the individual forms. It is certain that in this manner we could discover a great many relations which are peculiar to pure world-space. Such discoveries could not, however, be imagined, and would bear hardly any resemblance to Euclidean space. Pure world-space would have at least two dimensions, and the actual number of dimensions would depend on the particular conditions under which we were considering the whole of the structure. In connection with this world-space time would play a part altogether different from that which it plays in the space of our imagination.

In itself it might well be the case that under certain conditions

the whole relational structure of space and time might appear to us such as it is expressed in the fundamental equations of the theory of relativity. At the same time the method which we are pursuing will not allow us to reach a decision either for or against these equations.

The question now is forced upon us whether there is a world-time in this sense, that we can imagine this time as something equally embracing the universe as a whole. This would imply that there is a totality of all the states of the universe which occur at the same temporal point. In the first instance such a simultaneous presence of all the points of the universe would be no more than a convenient fiction, corresponding (for example) to structure of Euclidean space. We must not do more than take it as a kind of provisional figment designed to allow us to fix our thought. A deeper penetration might perhaps allow us to adjust this version of world-time in the same manner in which we were compelled to adjust the concept of Euclidean space from the point of view of the world-forms.

For the moment we treat the concept of world-time, such as we formed it above, as an auxiliary concept which still remains to be rationalized, and which, much like the forms of Euclidean space, is based on the individual form of our experience, a form from which we cannot set ourselves free without very elaborate and abstract intellectual processes. Within this concept we can form other concepts, for example that of the world-picture, which is the total state of the Whole corresponding to a present moment of world-time.

We may here mention another important characteristic common to all the forms of continuity: they have no magnitude, and nothing in them is in itself great or little. In the space and time of our experience there are only relations between magnitudes. If we assume that all the relations subsisting in time and space are retained, we can imagine the universe increasing or decreasing without any change being brought about thereby. If the universe were to shrink to the thousandth part of its size from second to second, and if this process were to continue indefinitely, we, who are a part of it, could never be aware of the fact: space and time contain their measure in themselves; they are merely the expression of mutual relations, and in themselves they are nothing. This is true at all the stages of our survey. As individuals we have at least a relative standard to which we can refer everything alike, namely our own organism, which is unique for us as opposed to all the rest;

at the trans-individual stage, on the other hand, all standards are of equal value for us: there is no great and no little, no near and no far. The importance of this becomes very clear when we reach the last stage of the survey, that of the forms of plenitude.

From this form all specific forms are to be detached, and the aim is that it shall embrace the Whole in its prime determinateness and its prime relation. The only difference between World-forms and forms of plenitude lies in the point of view. In order to look at the Whole of our experience the former make use of a kind of transcendence, which is undertaken from the standpoint of the individual forms, a process which consists of a gradual detachment from the individual forms and an examination of the forms which, after the process is completed, remain over from those which we had already found. Transitional and approximate forms are here admitted, for these have a limited applicability to reality and give us valuable information about the interconnection between the entities of reality.

On the other hand, the forms of plenitude contemplate the Whole without reference to the individual forms: they look at it as it is and in the fulness of its reality as prime relation and prime determinateness. Thus in the form of plenitude we pass back to the prime form; only now we no longer confine ourselves to the consideration of its most universal characteristics, but consider it in the fulness of its reality, which we seek to apprehend in a supra-temporal, supra-spatial, and supra-individual manner. The individual form now is no more than one dependent manifestation among others of the prime relation and the prime determinateness.

At the beginning of our analytical development we sought to develop the main characteristics of the Whole through all the stages. The outline which we followed was that of the prime form. It is a method which does not lead us very far: the end of the road is reached at the world-forms. The concept of plenitude is what may be called the fictitious completion of this road.

The world-forms are based on the process of transcendence, which starts from the results of the analysis. The forms of plenitude are based on the fiction of a perfect immanent apprehension of the Whole.

The question now arises, What remains of the form of continuity when we pass over to the forms of plenitude? We have in any case one rudimentary germinal form of continuity derived from the prime relation, namely the pure form of oscillation. From now onwards this is no longer a purely abstract form, and we apprehend

it in the fulness of its reality and in connection with the prime determinateness in its plenary reality. The all-real trans-individual continuity which results from this is beyond the powers of our imagination, but we are able to indicate its main characteristics, much as in mathematics we are able to trace the laws of a non-Euclidean space which we are not able to imagine.

This all-real and trans-individual continuity will be much nearer to our pure form of knowledge than to the individual forms of space and time. If we wish to extend our original idea of knowledge in order to apply it to this trans-individual continuity, then the latter would be a multiple form of knowledge, supra-individual, poly-dimensional, immanent, and immediate. (This would follow from its multiple determinateness.) To this we might give the name of universal knowledge.

At the stage of plenitude the world-forms and the individual forms have a merely relative significance. Under the method which we now adopt for our survey they pass altogether into the background. Here time no longer has the form of a series, for the form of series arises only where there is individual intuition. On the other hand, the form of oscillation, such as it is manifested in Plenitude, includes within itself the space and time of our experience: they are two relative manifestations of it among others. In view of this we may give to the concepts of space and time a somewhat more general meaning, and in this case we give to the continuity of plenitude, since it is the prime form of space and time, the name of universal time or space, much as we already called it universal knowledge. In the form of plenitude the three forms of continuity are wholly merged, and we have what may be called "all in one". At the standpoint of the individual, on the other hand, their opposite relations tend to emerge, and thence the various subordinate forms result.

Universal time is not merely pure form of relation, like the form of oscillation: it is this form of relation in the fulness of its prime determinateness which is the prime datum of the Whole. If we compare it with world-time we may take it as the sum total of all the world-pictures taken from a supra-individual standpoint, where these world-pictures are not taken as a continuous series but as a single One.

Universal time may also be considered with reference to a fraction of the Whole, for example to an organic individual. This means that all past or future world-pictures which refer to this

particular individual are comprehended as a unity. Such a partial version of the concept of universal time, when referred to a single individual, or generally to any object or event, is called the "idea" of this object or event. Further, in relation to this idea we describe as embodiment of the idea any partial world-picture, that is, any definite manifestation of the object in question which we would find at the different moments if, at the stage of the world-forms, we were to analyse them into a temporal series.

Such ideas are wholly practical structures. Their basis is the universal Unity. We are free to form such ideas for every object, individual, or group of individuals. All that is needful is to attribute to the object a series of images manifesting its development, a series which stretches indefinitely into the past and the future. An idea may also be formed for a class of objects, that is, for a concept. The idea of a concept then appears as the sum total of all the characteristics common to the evolution of the class of objects which are embraced by the concept, and hence as the law which governs the formation and the evolution of the objects which are comprised under the concept. Hence in a measure the idea may be called a formative principle.

One fact must never be forgotten: all these structures are relative, and, though they are based on the unity of the Whole, they have no independent validity. Naturally certain ideas overlap and take their place in a "prime idea" of the Whole, which in turn is simply universal time, or, in a more general sense, universal knowledge. The latter again is nearly equivalent with what is sometimes called "*logos*" for short. The interrelation of all possible ideas is equivalent to the "world-order".

This version of the idea is closely akin to the Platonic Idea, which is the reason why I have here spent some time on it. I can do no more, however, than briefly touch on all these concepts and their interrelations.

II. Transformations

We have outlined the foundation of our theory. We are convinced that it is of universal validity, since it is at the same time the fundamental structure of the whole of thought. But there are many different ways of following the outlines and of representing the contacts and the interconnections which subsist between them.

The process of analysis has given us a fundamental order, and with it a system of concepts; and it rests with us to select the

point from which we proceed to investigate it. We are not compelled to begin from our pole of order, nor are we tied to our fundamental axiom. We may substitute for it a more narrow version of the fundamental concept, or a system of axioms consisting of a number of such concepts. For certain purposes it may be superfluous to go back to the pure prime form.

It also rests with us how completely we wish to carry the analysis through. We may lay a stronger emphasis on certain intermediate links, or again we may neglect them. A group of facts which appears important from a certain point of view may be formed into a separate concept, or may be given a separate designation; or we may form an image of them and in our terminology treat them as a separate thing or something, if this should make it easier to set out our view; or we may select a point which we look at as the essence and centre of the whole of the exposition. Ultimately all these are simply questions of convenience.

At the same time the particular method of our procedure gives us views which differ in form and often appear to differ in content. To these we give the generic name of "transformations", and if they are well ordered, we call them philosophical systems. The position of the system within the natural order is determined by the system of axioms which it assumes implicitly or explicitly; it is this axiomatic system that we mean by the *standpoint* of a philosophical system.

If we wish to move with complete security when setting out such a separate version and to understand its relation to other possible versions, it is necessary, of course, first to have obtained a general view of the fundamental order from the vantage-point of the pole of order. It is this which gives us a firm foundation and a clear view, and allows us to weigh the advantages and disadvantages of each separate version and to select the starting-point and the direction of an adequate version of this kind. It is in this way alone that we realize the relativity of such versions, and see that in a higher order they merge into a single picture.

A transformation of our fundamental order may be compared with the transformation of an equation in algebra. Innumerable and exceedingly complicated forms may be given to such an equation, and yet all these forms, however diverse they may at first appear, denote one and the same fundamental structure. At the same time each of these forms can lay a particular emphasis on some characteristic of the system of relations which is expressed in

the equation. For this reason the transformation of equations in analytical geometry and mechanics is an essential method for the investigation of spatial or temporal-spatial relations.

The transformation of equations in analytical mechanics is particularly instructive, for the transformation of these may be undertaken from three different points of view, from the purely analytical, the geometrical, and the mechanical.

The purely analytical transformations of an equation show the relation of the spatial structure (its track of movement) to a given system of co-ordinates.

The geometrical transformations of an equation (transformations of co-ordinates) show the relations between a spatial structure related to one system of co-ordinates and the same structure when related to other spatial systems of co-ordinates of the same or of another nature, the relation between all of which is purely spatial and unequivocal. By changing the system of co-ordinates the structure of the equation may undergo a complete change, and frequently analytical relations of a wholly different nature emerge; but what they represent is always, in a geometrical sense, the same spatial structure and the same system of spatial relations.

The third kind of transformation (the mechanical) arises when the same track of movement is related to a new system of co-ordinates, the position of which with regard to the first system of co-ordinates is determined, not spatially, but temporal-spatially; thus relatively to the old system of co-ordinates the new system has a velocity. The equations for the track of movement which we now obtain no longer denote the same geometrical structure, but they still denote exactly the same temporal-spatial process of movement.

Such tracks can never be represented geometrically in an unequivocal manner. The naïve view which holds the opposite is wrong. The purely geometrical form under which they are taken is merely a matter of convenience. Thus wholly different geometrical structures are obtained for the orbit of the moon if the co-ordinates are based at the earth and at the sun. A mechanical question of standpoint of this nature has been the reason why entire philosophies have been at enmity with one another, simply because the fact of the relativism of systems was not recognized. It was not seen that all these forms, different as they were from the geometrical and the analytical point of view, nevertheless corresponded to an identical spatial-temporal process, and represented the same event from a different standpoint. It was thought that spatial-temporal structures

are geometrically unequivocal and absolute, and it seemed impossible to reconcile the apparent contradictions which were obtained according to the standpoint which was taken up.

The case of the fundamental structure of thought is very similar to that of the analytical and geometrical representation of tracks of movement. If we set out the order of the system of concepts which we have developed, and if in doing so we start from different standpoints, we reach a number of systems which appear to contradict one another, unless attention is paid to the fact that they take a harmonious place in a fundamental order once the difference of the standpoints and their relation to one another is taken into account.

Many of these systems prove particularly valuable for use in a narrower field. For example, a naïve realism is indispensable for everyday use, and it is taken as the foundation of more than one science. Physics, on the contrary, can make progress only if its realism is restrained by criticism. This realism would resemble that which we would obtain at the stage of the world-forms if Euclidean space and world-time are taken as fixed data.

A time may perhaps come when Physics will have a far more universal set of axioms than it possesses at present. Thus the physical theory of relativity is an attempt to set free the axioms of Physics from such realistic concepts as space, time, and matter in the same thorough manner in which it has already been set free from the "secondary" qualities, like colours, sounds, etc.

There is a very close kinship between the philosophical systems which we can derive by means of transformation out of the prime form (a process of pure analysis) and the philosophical systems and world-views which have attained historical standing. A place in our fundamental order can be assigned to these historical systems: to all in their main outline, and to many down to their last details. Their position in this natural order is best characterized by means of their standpoint, that is, by means of the system of axioms on which they are based, a system which, however, is rarely set out expressly and hardly ever is presented in all its detail. On the other hand, it can usually be inferred from the context.

It is the elaboration of the axiomatic foundation and the assignment of a place to it within the natural order which gives their real significance to the various philosophical systems, and much

becomes clear by this means which, without the reference to the fundamental order, must remain inexplicable. It is the connection with the natural order which throws a true light on the interrelation of the systems. The apparent contradiction between views which sustained controversy through the ages and never was definitely removed disappears in great measure once the relativity of these views and their relation to the common fundamental order is understood.

All the historical systems fit into the same framework. From the earliest mythological attempts to the modern systems with all their subtle exactitude the movement follows the same circle, and throughout it is the same set of fundamental relations which is being explained. The relation between the philosophical systems is not correctly described by the assertion that all are saying the same thing with different words: this follows from what has been said already; the case is that they are different manifestations of one and the same more comprehensive fundamental law.

The fundamental order may be compared to a general law of nature as contrasted with the infinite variety of its possible manifestations in the world. We must be acquainted with such a law before we can understand the interconnection between its manifestations; it is possible that each may be apprehended severally as an orderly whole governed by laws; but it can be truly understood only by means of the universal law which binds it, together with all the rest, into a whole of a higher order.

Many philosophical systems have a very wide irrational (or axiomatic) foundation. At the same time almost all of them throw a particularly bright light on some one side of the total structure of the natural order. The element of truth which they contain, and the influence which they have acquired, is derived from this fact. On the other hand, they neglect other aspects of the fundamental structure, and this is the chief reason why they came to be neglected again.

In the philosophical systems the natural fundamental order of our thought emerges the more clearly and cleanly, the more universal are the concepts with which the systems deal, and the simpler are the events in which they are manifested. If we wish to recognize the fundamental order if we meet it in a strange garb and in some particular manifestation, then we must first have completed the investigation of this fundamental order in all its main ramifications.

Our previous investigations can give us no more than a hint about the manner in which this is to be brought about.

Once we have trained ourselves to follow this natural order which prevails over the whole of our thought in every direction—a discipline which will first be exercised in the region of the universal concepts—it will prove the most trustworthy guide in more complex regions, leading us everywhere to new discoveries and admitting us to the intellectual world of others. Even if it were denied that the concepts which our analytical system leads us to form have the applicability to reality which in fact they certainly possess, yet in any case it would have to be admitted that this system is of the greatest value as an instrument of investigation.

If we allow the fundamental order to be our guide in the exploration of the intellectual world of others, we shall find that it throws a startling light and leads to surprising discoveries, illuminating distant and obscure parts, so that we find an abounding life where formerly we stood before a closed door. We continue to find new subtleties in the main structure, and much develops into a fuller life where the author himself had seen no more than a germ.

The natural fundamental order gives us intellectual liberty. It sets us free from the rigidity of a fixed analytical version of reality, and allows us to adapt ourselves to the greatest variety of assumptions under which it seems desirable to give a representation of the facts. It makes it easier to understand others and effects a compromise between apparently contradictory views; and, in short, it makes us largely independent of the external form of the exposition. It allows us in each single fact to command the whole network of the universal concepts in which the whole of our actual thought is absorbed. It is a power.

Some reflection of the power due to a more or less complete command of this order is naturally to be found with almost all those philosophers who have succeeded in discovering some main outlines of the natural order at an important point. Fichte had a particularly powerful sense of direction; and, in the excess of his enthusiasm, he proclaimed to the world the all-embracing importance of his fundamental ideas in words which may cause a later age to smile, but which, rightly understood, are profoundly true. Hegel, who at bottom was grave and cool, and in many respects penetrated deeper than Fichte, allowed himself to be drawn into the greatest exaggerations by this sense of power.

This then is the sense and value of relativism, a term which I developed first in 1886, and explained in my *Grundriss* (1889) and in later and more detailed works: the scientific world-views in the main are special views of the natural fundamental order, depending on the wide or narrow formulation of their systems of axioms; in other words, of their standpoint. Further, they differ in the particular side of the structure of this great order on which they lay emphasis. This relativism implies at the same time a "theory of world-views".

Such a theory is made possible by the fact that the different world-views are not arbitrary figments but the results of hard striving after understanding: they are the expression of an inner necessity, and hence are subject to certain laws; and the differences and the apparent contradictions between them are not due to mere mistakes of their authors, but in the main are caused by actual facts of a higher order which can be exactly defined. Thus relativism reveals to us nothing less than a harmony of the world-views.

There are, of course, differences between the views of philosophers that cannot be explained easily and immediately by means of the natural order. Such non-rational peculiarities occur chiefly in the region of the more complex notions. So long as we are moving in the region of the most simple and universal fundamental concepts it is possible to have a sure and certain view of the whole structure and to set it out by means of a rigorous, quasi-mathematical method; but as we pass over to the region of those concepts which are complex, overlapping, and arranged in a system of vertical orders, the guidance afforded by analysis becomes less and less certain, and it becomes more difficult to penetrate and have a general survey of the relations which connect each concept with the others.

As we continue to advance into this region we have to rely more and more on instinct: this is a personal quality, but it can be rendered keener by experience and training; it can also be influenced by the subjective and contingent emotional attitude of the mind. In view of the bewildering number of threads of relation with which the mind meets immediately in its search, it may well happen that a thinker is led to take one point of intersection in the net of relations, and the threads which start from it, for the whole, while another finds revelation in some other region, with which he has become more familiar, and in it sees the light of the prime order, if not directly, at least through a glass. Neither can find the bridge

leading from his world to that of the other without altogether giving up his own point of view, and as a rule he is not even aware that such a surrender lies in his means.

Besides this, it may happen that the same words are used in different senses and that the strict analytical connection between the concepts is lacking, so that irrational ideas are imported; in which case the region of the most complex concepts is particularly likely to be the scene of ambiguity, faulty syllogizing, and conflict.

In these regions, as in the rest, the greatest progress will be made once the fundamental structure has been clearly understood in its simplest outlines; once this has been effected it can safely be used as a guide even in the most complex regions. In every case, however, a successful progress in this region demands a keenly developed sense of rightness. Hence the practice of penetration becomes an art, and the systems of those philosophers who move mainly in the region of the ultra-complex are more or less strongly coloured by their authors' nature. The whole mental attitude of the individual man and of an age here plays its part.

I do not propose here to enter any further upon the relation between personality and world-view, or on the meaning of the irrational in philosophy: the remarks I wish to make on this matter I reserve for the last chapter. At this place my first aim is to show what is common to all the different world-views, and how they are all striving after the same fundamental order. In the Second Part I shall use the historical development of philosophy in order to prove this point. I shall emphasize those elements of the fundamental order which the different philosophers have most clearly depicted: elements which were implicit in the manner selected for setting out this system. We shall devote particular attention to the close and systematic connection between different world-views, and shall thus easily find the goal towards which philosophy is developing.

Nothing will show us more plainly the constructive power of the ideas which we have developed in the earlier sections than the discovery that in fact the thoughts of philosophers have for thousands of years been revolving around this one system of concepts; that the special forms of relations which we have been deriving in the course of this work attain life and significance in the various philosophical systems, and that these analytical forms give us the key to the understanding of these systems, throw light

on their interrelation, and give us a mass of fresh knowledge; and finally, that the whole history of philosophy is inspired by a life of its own, and is in fact a collective labour upon one fundamental thought on which the different philosophers throw light from their different sides without ever being able to step out of the sphere of this prime thought.

The ideas which I have here set out will win their way to acceptance: their simplicity, practical nature, and philosophical scope warrant this much. Many factors are co-operating in order to prepare the ground for these ideas. Although I published the idea in its original form a good many years ago, others seem to have discovered the traces of relativism independently, without however discovering its real foundation. Thus Jaspers in his *Psychologie der Weltanschauungen* (1919) teaches a psychological, vitalistic, or irrational relativity. Müller-Freienfels follows a similar road in *Persönlichkeit und Weltanschauung* (1919). Groos's work on *Der Aufbau der Systeme* (1924) is based on the assumption that there is at least a rational connection between all possible systems. He lays a particular emphasis on the importance of Antithesis as a clue to the meaning of the facts. Cohn's *Theorie der Dialektik* (1923) contains important preparatory work for the understanding of relativity. In Hofmann's *Antithetische Struktur des Bewusstseins* (1914) there is an attempt at a rational explanation of relativism, although his analysis of the structure of thought is contained within very modest limits. Rehmke approaches relativism from another side, but by the same analytical road. E. L. Fischer has adopted the idea of relativism in his *Überphilosophie* (1907), albeit in a somewhat incomplete form.

The recognition and adoption of this idea in its full scope is merely a matter of time.

RETROSPECT

Fundamental Concept, Analysis, Fundamental Order—Natural Order—Interpretation—Germs of Concepts—Fundamental Structure of Thought—The Converse—Chains—Transformations—Relativism—Theory of World-Views.

We shall now cast a look back on the road which we have covered.

In the Propædæutic System we made a synthetic description of the Whole, which led us to the discovery of three universal forms

under which every event is manifested to us. A comparison, and an extraction of the common elements, gave us a fundamental concept of complete universality—a Prime Form. Formally this could be considered from two points of view: it might be looked at as prime form of relation, and as prime determinateness (or Quality). These may be called the two poles of the fundamental form, and they are indissolubly connected. Between them there is a kind of intermediate form—the synthetic opposition between unity and multiplicity (Quantity), which further develops into Order and Gradation (Modality).

We took the prime form of relation for the starting-point of an analytical development. The principles by which this analysis had to be conducted followed immediately from the fundamental concept. The analysis led us to an orderly representation of all the possible forms in which the fundamental concept can be expressed, and to the interrelation which subsists between these forms. In this process the prime form of relation was what may be called the uniform point of reference—the pole of order of the whole of the development; while the prime determinateness at the maximum of its development (which lies beyond our reach) became plenary reality; as such it is the final pole of the development.

The prime determinateness was first considered in its most general connection with the prime form of relation (pre-individual forms); then the axiom of manifoldness (Individual Forms) and Order and Gradation (Organic Forms) led to the final development, where it signifies a Whole defined and arranged in a certain manner (World-Forms and Forms of Plenitude). The ordered representation of all the facts which can be acquired in this manner was our fundamental order.

At first this fundamental order is a perfectly abstract and formal system which might be compared with the abstract representation of geometry. But the fundamental concept from which we started was not taken arbitrarily: it was derived from experience, and therefore we assumed that the fundamental order had some applicability to reality, and more especially that it was tantamount to a natural order of the apprehension of all actual events. This led us to the “interpretations” of our analytical structures.

In order to find these interpretations it became necessary to find those empirical groups of relations which coincide with a group of related terms as given by the analysis. It was necessary that the threads which interconnect the members of the analytical group

should agree with the threads of the empirical group both in their general direction and in the points at which they intersect, the result being that an empirical group can be substituted without contradiction for an analytical group. Of an empirical group which satisfies these conditions we should say that it corresponds with our analytical group; and the discovery of a "corresponding" empirical group was an "interpretation" of the analytical group.

Our first guide in the process of interpretation consisted in the propædæutic system, which gave us a first sifting of the whole of experience, and finally showed that in the prime form we have the most universal expression of experience.

Next we found that the concepts which we have drawn from experience will give us a satisfactory interpretation of our analytical forms only after we have passed through all the stages of our analytical development. This applies even to the simplest and most universal concepts of experience, like being, substance, ego, thing, consciousness, space, and time. We also saw that even the most universal concepts with which we were acquainted, and which we had drawn from experience, were exceedingly complicated.

At the same time even the first stages of our analytical development showed us plainly the germs of certain main empirical concepts. The more important rudimentary concepts of this kind I pointed out at the first stages of the analysis in order to facilitate the further pursuit of the development of these ideas.

The form which the development of these universal concepts assumed and the importance of the part which they play in our thought made it plain to us that the method of analysis led to the gradual discovery of the fundamental structure of our thought and of the whole of experience. We saw that to the most important and indispensable of our universal concepts a harmonious place could be assigned in the system which we had reached by means of analysis, without the loss of a single detail or of a single relation to an outside term; and we found that by this means they are explained and rationalized in a very large measure.

We had thus traced the whole of the fundamental order from one pole of order to the counter-pole—from that of the prime form to that of plenary reality. At the end we found that another method is possible. This starts from the counter-pole, and it proved very fruitful. It leads to a "converse", which is closely akin to the point

of view of natural science. It allows us to form a fresh set of concepts.

Further, we saw that out of the whole system of concepts an individual concept may be withdrawn. The development of this concept may then be traced separately. This allows us to see how such a concept develops analytically from its first germ until it reaches the fulness of its significance. To the sum of the different stages of development we gave the name of a chain. It appeared immediately, however, that all the concepts of our system are interconnected in such a way that each single chain of concepts would embrace the whole of the analytical system if it is to be complete. Hence it is possible (for example) to take the whole of our fundamental order as an analysis of the concept of substance, or again as an analysis of consciousness, or of continuity, or of space and time, or of Ego. Each time we find the same system in a different manifestation, which in turn depends on the point of view from which we set it out. Here the saying "All is One and One is All" acquires a peculiar significance.

Such points of view lead us to subsidiary versions of the system; if we leave them out of account it is clear that the system is simply an exposition of the internal interconnection between our universal concepts, or of the fundamental structure of our experience. In short, it is the natural order of human thought.

Another characteristic is forced on our attention, which is that our natural order at the same time is a theory of philosophies, in so far as these are rational or amenable to rationalization. This conclusion is due to the fact that we found that the outlines of our natural order and of our Converse are not the only conceivable methods by means of which the whole structure of relations can be represented. It is true that they show us the most expedient method of development when it is our object to obtain the most complete, uniform, and orderly possible conspectus of all the interconnected facts; but it is possible also to set out these facts in another order. Such an order may involve a circuitous road, and may be incomplete in some respects; but at the same time may in some circumstances be advantageous, for example when it is not desired to discover the whole structure of relations but merely to throw light on some particular class of forms of relation. Some special form may be placed in the foreground, and may even be taken as an axiom; and everything can then be referred to it as a kind of *relative* fundamental concept or pole of order.

This brought us to the idea of the "transformations" of the fundamental system, to the subsidiary systems, and to the "rational relativity" of these systems.

Finally, it was said that in the main characteristics of the philosophical systems which have been developed in the course of ages we need see no more than a series of different expressions and partial representations of the fundamental order; or, again, they may be treated as subsidiary relative systems as defined above. In the following Part we shall see that they all are obviously sustained by a just sense for the outlines of the natural order, and that in their main characteristics they adapt themselves very closely to this natural order.

This amounts to a kind of theory of philosophies, and leads us to a peculiar view of the importance of the historical development of philosophy. This development is seen to resemble a progressive series, or a ceaseless disentanglement of one and the same structure. In this process new aspects are continually being discovered; what has been gained is consolidated, and the road is prepared for a fresh advance.

BOOK TWO

THE CONNECTION BETWEEN THE DIFFERENT PHILOSOPHICAL SYSTEMS

Prefatory Remarks—Outline of the Second Part—Idea of a History of Philosophy.

I propose to devote the second Part of this work to the Theory of Philosophies which I briefly set out at the end of the first Part. At the present moment I will confine myself to examples to illustrate the central idea.

I shall attempt to give a conspectus of the development of philosophical thought, arranged in such a manner as to allow the internal coherence of the whole process clearly to emerge in a few main traits. I shall treat in rather greater detail those events which are particularly characteristic for the spirit of the whole development and its connection with the natural order of our thought, and those which have been of particular influence on the development of philosophy. While I do not intend to give an exhaustive history of philosophy, I believe that I can give some stimulus to a profounder view of this history as well as some contributions towards the fulfilment of this plan.

It is the chief aim of a history of philosophy to render intelligible the growth of philosophical views of the world. Two problems will occupy the foreground of such a history: first, that of discovering the driving forces which have led to a reshaping or a transformation of world-views, and secondly, that of forming a judgment about the importance of the different philosophical systems within the historical series. For this end some standard is requisite. We shall not be able to reach a satisfactory solution of these two tasks unless we possess a uniform standard—that is, some comprehensive and fundamental view which enables us to survey from a point of vantage the interconnection between the systems and the whole process of their development. Further, it will be necessary to find the psychological conditions which permitted some particular aspect of these fundamental facts to assume a paramount importance in the mind of a thinker, and which caused some particular form of expression to seem more apt than others. In doing this we must carefully take into account the influence of environment and what is called the spirit of the times.

This demands a knowledge of men, a keen psychological sensitiveness, and an accurate knowledge of the mental habits and the intellectual and linguistic customs of a period, as well as of the events which favoured the development of the different philosophies.

The first basis of a further understanding and appreciation of any philosophy, which is the product of its age, consists in the

ascertainment of the standpoint of such a system. For us the idea of a standpoint is not vague or individual: it is the orderly representation and appreciation of the system of axioms which lies at the bottom of a philosophy and of all the irrational elements which form a part of it. By the system of axioms I mean a system of concepts and principles which are not derived on rational lines, but are tacitly or expressly assumed, and from which the whole of the philosophical system can be derived by rational processes. Thus the theory of axioms is the key to an understanding of the various philosophical systems.

In arranging and appreciating the various systems of axioms we rely, in the first instance, on the natural order which was briefly outlined in the First Part.

The sequel will be sustained by the fundamental idea of a history of philosophy such as it has just been outlined, although this idea cannot here be realized completely. My chief intention is to bring into the light the fundamental idea of mankind which perpetuates itself through the ages; to show how views which apparently are wholly different find their place in our fundamental order; how this causes them to coalesce into a higher unity and thus to appear as "various emanations of one and the same rational understanding", as Rixner called them in his *Handbuch* as long ago as 1822.

I wish to maintain the exposition as fluid as possible. For this reason I refrain from quoting chapter and verse even where I quote the actual text of philosophical works. Those who are versed in philosophical studies will be familiar with the passages, or, at least, will have no difficulty in tracing them.

HISTORICAL DEVELOPMENT

1. Primitive Forms of the Fundamental Idea

World-Views subject to Laws—Their Origin—Simplest Variants of the Prime Form.

A PHILOSOPHY is not an arbitrary structure: it is the offspring of our intellectual life, and it is subject to law. It is the reflection in an individual of facts which are revealed in the data of experience, the main outlines of which are the same for all of us. When we compare the different forms which philosophies have taken, this fact becomes particularly striking as soon as we make the fundamental order the standard of comparison, since it is this fundamental order which is a particularly clear and complete representation of those fundamental facts, the elaboration of which has been the end of the endeavours of all thinkers through the ages. Hence the different world-views have a certain universal validity in spite of the individual forms in which they are manifested, and in spite of the resultant and apparently irreconcilable differences.

Accordingly it is natural that the historical evolution of philosophy shows a very notable uniformity and regularity in this method of considering the world. We find one fundamental thought persisting throughout—an unresting attempt at setting out the prime form and the facts which it relates. Here I propose briefly to recall what I said on this subject in *Wirklichkeit, Wahrheit und Wissen*.

Man is a member of the Whole; he is dependent on the physical events of his environment, which may help or harm him according to his conduct. This causes in him a desire to understand the nature of this dependence, and of the physical events around him. Man begins to reflect on the events of nature at the very earliest period of his history. He looks for some guiding concept which will allow him to comprehend the Whole.

Now he sees himself in a world of opposed terms, each of which is dependent on the other. He is not yet skilled in generalization, and consequently he makes use of comparisons drawn from the world of intuition which surrounds him, and which is more easily intelligible, in order to discover what lies hidden from him and in

order to find rules to govern his action. This is the origin of those saga-like philosophies which in a childlike and primitive manner combine the nature of poetry, religion, and philosophy.

Now here it is particularly remarkable that even in these first attempts after an understanding of the world the prime form plainly takes the shape of the unity of opposites.

At a very early stage man uses the notion of the interpenetration of two opposite principles in order to explain the world. These principles interpenetrate, and form one unity, while at the same time the fact that they are opposites renders them incompatible with each other. They separate and yet are compelled to unite again. It is this interplay which is equivalent to the world itself.

This is the simplest version of the fundamental idea of mankind.

Life and colour is given to this general idea in many different ways. In many versions the two principles are heaven and earth, embodying the opposition between higher and lower, light and dark, cold and warm, heavy and light. It is seen that out of their interplay the world is formed. This idea of the interdependence of opposites is frequently expressed in a more emphatic manner: the desire to employ a relation of human life in order to provide a sensuous parallel for the fundamental relations causes them to be identified with male and female.

Such descriptions of the events of the world may be found in innumerable forms in primitive ages, and, even now, among primitive races. The formation of universal concepts and their expression in words is a gradual process: it is the beginning of philosophy proper. The oldest Greek theories show plain traces of their origin in folklore: very soon, however, we find vigorous attempts to give a clear definition to ideas, and to give to the prime form its abstract shape as a form of opposition.

2. First Scientific Versions

The Pythagoreans. Opposition.

Heraclitus—Unity of Opposites—Relation between his Two Views: the World as a Set of Opposites, and the Physical View—Relativism—Parmenides as Opponent of Heraclitus.

Xenophanes—One and All.

Parmenides—Fundamental Ideas—Significance of *εἶναι* and *μὴ εἶναι*—First Theorem—*νοεῖν*—Second Theorem—Third Theorem. The One and the All—Comparison with Indian Brahma—Significance of the World of Appearance.

Zeno—Melissus.

Sophists, Atomists, Empedocles, Anaxagoras.

THE PYTHAGOREANS

The Pythagoreans were among the first who succeeded in these attempts at a rigorous formulation. The most general expression of the prime form they found in the combination of two fundamental opposites, of the One and the Many. In its concrete shape this prime form was equivalent to number, and in number the Pythagoreans further saw the opposition of infinity and finitude. At a later point they added other and more complicated forms of expression to these formal opposites, like quiescence and motion, light and darkness, as well as others.

They failed, however, both in comprehending these forms together in a more general concept and in discovering their inner connection by analytical means. They did, indeed, attempt to discover the connection between this prime form and the complex concepts of experience: but their attempts never were more than a toying with analogies.

HERACLITUS

This attitude of the Pythagoreans—often unscientific, and perhaps somewhat arrogant—roused Heraclitus to a vigorous opposition. He approached the question from a different side, and succeeded in advancing so far as to understand that opposition is a pure form of relation. In numerous ways he has expressed the conviction that the unity of opposites is the prime form of the whole of reality. He does not state this by means of metaphors or images, nor does he express it indirectly: he understands it as an abstract truth, and does not fail to find adequate words for it.

The prime form for him is "One and All". *Ἐκ πάντων ἐν καὶ ἐξ ἐνὸς πάντα*. The One is severed into opposites, and the opposites

coalesce into One. He speaks of *παλίντροπος ἄρμονίη*, and it is in this indissoluble interplay of opposites alone that the All is revealed to us.

With Heraclitus the most impressive manifestation of this prime form is Becoming, and consequently for him Becoming is a more definite form in which the Whole exists. There is no quiescence and no absolute being: all is in a state of flux. This flux and becoming Heraclitus describes in many different ways; and he also describes it abstractly as the union of the opposites—of being and non-being.

Heraclitus further enumerates more complex subsidiary forms which manifest indirectly, if not directly, the prime form which he has already defined in a universal and abstract manner; such are correlated terms like analysis and synthesis, attraction and repulsion, tension and relaxation, and compaction and dilution. Beyond these he points to such related terms as up and down, high and low, straight and crooked, young and old, day and night, life and death, waking and sleep, male and female. All these contrasts, however, are loose and are based on exceedingly complex facts: compared with the fact which Heraclitus described with the utmost exactness and the clearest understanding as the most universal prime form of relation the reference to these correlated terms is no more than a vague suspicion that there may be some uniform connection between all such forms and the one prime form.

Heraclitus apprehended the prime form clearly and abstractly—a fact which is unaffected by the other fact that from a more physical point of view he held that the world emerged out of a prime substance which he called fire. He treats this prime substance at the same time as a kind of world-soul. The sayings which have come down to us do not show clearly what kind of relation he held to subsist between the physical view and the pure prime form. In any case, a clear distinction must be maintained between the two forms in which he represented the world—the physical and the philosophical.

The view of reality held by Heraclitus led to a certain relativity, which allowed him to combine contradictory assertions and to show that each of them is correct when looked at from the proper point of view. Heraclitus was well aware of the fact, and he extended the principle to questions of a more practical importance, and used a wealth of examples to prove it. The charm of paradox which this method contains may well have earned him more applause with the multitude than the epistemological and metaphysical doctrine which

is the basis of these paradoxes, and won him the epithet of The Obscure.

Certain it is that in his age it was extremely difficult to get rid of the idea of a material substratum of the Whole. Older philosophers had begun with a search after the prime matter. In the age of Heraclitus the Pythagoreans had made the first attempt to free philosophy from the idea of substance and to discover a wholly universal form of relation, although it is probable that the chief results of these attempts were not known until later. Heraclitus took a most important step forward. His theory was entirely novel, and could be understood only if the idea of being was taken quite abstractly and was detached from the idea of substance. Heraclitus' *Becoming* and the unity of opposites is intelligible only as a prime form, or pure form of relation. It seems, however, that Heraclitus did not succeed in bringing this distinction out with sufficient clearness, which was essential if his doctrine was to command assent; and thus it is natural that it should have met with scant understanding at that time and frequently provoked surprise and violent opposition.

Parmenides probably was the most vigorous opponent of Heraclitus. He spoke contemptuously of the people of the *παλίντροπος κέλευθος* who consider opposite directions to be the same, and who treat being and not-being as identical and yet as not the same. He calls them ignorant, uncritical, and stupid: "twin-headed".

The deeper reason for this severe judgment is to be found in the peculiar and totally different idea of being which Parmenides held. In order fully to understand this idea we must first deal briefly with the view of reality held by his master, Xenophanes.

XENOPHANES

Little has survived of the doctrines of Xenophanes, but that which has been preserved shows that his fundamental idea consisted in the view that the multiplicity and manifoldness of the Whole merges into One. His fundamental form thus is approximately that opposition between unity and multiplicity which we treated as a partial manifestation of the prime form. From Aristotle, however, it would appear that Xenophanes gave a considerably wider meaning to the prime form, representing it as the immanent unity of opposites. For him it signifies the amalgamation of One and All, infinite and

finite, immutable and mutable, eternity and temporality. To this prime form, or, at any rate, to the aspect of unity which it contains, he gives the name of God. He emphasizes the abstract and non-sensuous nature of this concept and the danger of anthropomorphic tendencies. To this prime form he also gives a narrower version which he calls *νοῦς*. This *νοῦς* is a kind of world-soul which penetrates and forms the Whole, a creative and formative principle, comparable with human reason, all sight, hearing, and thought, yet at the same time quite unimaginable for us, the power of whose thought penetrates and moves the Whole.

PARMENIDES

In the teaching of Parmenides we may see an attempt to put Xenophanes' concept of *νοῦς* on a more definite epistemological basis. His aim is to introduce new logical distinctions. It appears that in the first instance he was striving after a distinction similar to that which we found at the beginning of our consideration when we were distinguishing between the forms of relation and the fundamental data of experience. But with Parmenides this is combined with the opposition between unity and multiplicity, and which such pairs of related concepts as relative and absolute, appearance and *in itself*, and so forth. It is possible to feel how the different aspects of this rather complicated system of relations appeal to him in turn: but he lacks the language to express himself, and without this a sure command of this structure of concepts is practically impossible.

The two main concepts of Parmenides are thinking and being (*νοεῖν* and *εἶναι*). He formulates them entirely abstractly, so that they preserve no more than a bare outline of their common meaning. At the same time considerations of language compel him to use them in the sense of ordinary usage: the mere facts of grammar make *εἶναι* indispensable to him. This ambiguity of his words makes his task much more difficult than it would be else.

The grammatical change of the forms sanctioned by language allows him to pass over from the abstract concept of *εἶναι* immediately to the form of *τὸ ὄν*. This next leads him to the idea of an independent "something" which is the substratum of the abstract *εἶναι*. "*Ὀν*" is a far more narrow concept than *εἶναι*: with Parmenides it is roughly equivalent to *prime substance*, and, indeed, it is this

concretion which allows the question about the nature of this something to arise. We shall see that Parmenides begins by describing its essential characteristics in a fairly general manner, but later defines it more narrowly, much like Xenophanes, as *νοῦς*.

From the above it is clear that *εἶναι* (*ᾧν*) does not denote for Parmenides our modern abstract concept of Being: it means, sometimes, something akin to our *thing in itself* or to our *absolute*, and sometimes the uniform prime datum, imagined as bare of all relation, which lies at the foundation of the Whole and is the ultimate source of the world of appearance; and sometimes ultimate Substance.

Parmenides describes the *ᾧν* as that which is quiescent in itself and indivisible, unchangeable, unlimited, non-spatial, and non-temporal. So far, then, he gives us assertions which constitute a negation of every relative element, and thus describe the "absolute"; but he goes on to call it the "One and All" (*πᾶν, ἓν*), that which comprehends everything immediately and is perfectly uniform in itself. This points rather to a form of relation. Next he describes it as a well-rounded sphere, and, finally, he establishes a close connection between *εἶναι* and "thought". Tradition does not tell us of any proof advanced by Parmenides for these predications, nor does it appear that he made any attempt to elucidate his notions or to throw light on their interconnection.

Μὴ εἶναι for him is not not-being in the sense of pure negation, in spite of the fact that at times he calls it *μηδέν*: it is a positive concept and is the correlative to *εἶναι* which has a positive content and is equivalent to the "in itself". *Μὴ εἶναι* denotes every kind of relation in contradistinction to the concept of *ᾧν*, which is the bare and unrelated datum. More particularly it gives expression to the fact that the relations *in themselves* are nothing; and similarly it signifies multiplicity in opposition to *ἓν*, and the attribute in opposition to the substance. What Parmenides has in mind here is before all the sense-perceptible properties. In its narrowest meaning the *μὴ εἶναι* is equivalent to what is now called Appearance in so far as this is imagined as standing in opposition to a reality which lies at the bottom of appearance: thus it is almost identical with "illusion". In its most abstract form it would come to denote the sum total of all the forms of relation in so far as these are taken one-sidedly in their state of cleavage. Thus implicitly it also includes

the prime form of relation of the unity of opposites in so far as the element of opposition is particularly emphasized in it, although the prime form of relation did not lie within the scope of his ideas. We shall see, however, that in spite of this it affects his view.

Parmenides makes a distinction between $\mu\eta\ \epsilon\acute{\iota}\nu\alpha\iota$, which has a positive content, and mere negation. If he wishes merely to negate that something has the meaning of an "in itself" he expresses this by means of such phrases as $\omicron\upsilon\kappa\ \epsilon\acute{\sigma}\tau\acute{\iota}\nu$, and this is the explanation of his central dogma, $\epsilon\acute{\sigma}\tau\acute{\iota}\nu\ \epsilon\acute{\iota}\nu\alpha\iota$, $\omicron\upsilon\kappa\ \epsilon\acute{\sigma}\tau\acute{\iota}\nu\ \mu\eta\ \epsilon\acute{\iota}\nu\alpha\iota$. If this proposition were interpreted as simply meaning that what is not, is not, it would be a mere tautology; and it cannot be believed that Parmenides attached much value to this. What he means to say is that the world of appearance which he describes by the words $\mu\eta\ \epsilon\acute{\iota}\nu\alpha\iota$ is nothing *in itself*. He would never have made a mere tautology the essence of his theory, giving it the first place and explaining it in the most various turns. It is unnecessary to follow Diels in translating $\epsilon\acute{\sigma}\tau\iota$ by "is possible" in order to escape the tautology.

It must not be forgotten that Parmenides' doctrine of $\mu\eta\ \epsilon\acute{\iota}\nu\alpha\iota$ contains a definite attack against Heraclitus, whose theory of the $\epsilon\acute{\iota}\nu\alpha\iota$ and the $\mu\eta\ \epsilon\acute{\iota}\nu\alpha\iota$ Parmenides obviously misunderstood. He charges Heraclitus with the view that $\mu\eta\ \epsilon\acute{\iota}\nu\alpha\iota$ and $\epsilon\acute{\iota}\nu\alpha\iota$ could be one and the same, and it may well be that Parmenides chose the epigrammatic tautology of his "not-being is not" in order to give the most fitting answer to the imagined perversity of Heraclitus. At the same time Parmenides' $\mu\eta\ \epsilon\acute{\iota}\nu\alpha\iota$ is not equivalent to $\omicron\upsilon\kappa\ \epsilon\acute{\sigma}\tau\acute{\iota}\nu$, which means mere negation. More particularly, $\mu\eta\ \epsilon\acute{\iota}\nu\alpha\iota$ has the entirely positive and real meaning which was pointed out above.

Nevertheless, an inner cleavage can be perceived in the above proposition. This need not surprise us: we find it throughout the works of Parmenides. It is due to his lack of confidence when dealing with a world of novel and far from easy concepts, and to the difficulty, already touched upon, of commanding it in language. Much labour was needed before men learned to appreciate the more subtle distinctions in this region of abstract notions and to find terms for their clear rendering.

Parmenides and Heraclitus represent the first great struggle after a perfectly universal and abstract expression for the continuum of world-events: it is to be regretted that of their doctrines no more than fragments have survived.

In its abstract form the *νοεῖν* of Parmenides comes very near to that of Xenophanes. At the beginning *νοεῖν* is the form in which the *εἶναι* enters into reality, and Parmenides actually says: τὸ αὐτὸ νοεῖν ἐστίν τε καὶ εἶναι; and elsewhere οὐ γὰρ ἄνευ τοῦ ἔόντος εὐρήσεις τὸ νοεῖν; in a third passage, which perhaps was in the same context as the second, he says: χρὴ τὸ λέγειν τὸ νοεῖν τ' ἔδν ἔμμεναι, "We must say that thought is that which is", adding by way of proof . . . "since it denotes a being, while Nothing has no existence."

All the three passages quoted have been interpreted in a different way. The last passage frequently is taken as meaning "It is necessary to say and to think that only that which is, is. For its existence is possible", etc. But this seems to force the words, and also does not give a good sense. The words τὸ αὐτὸ νοεῖν ἐστίν τε καὶ εἶναι have often been interpreted as though Parmenides had meant to say, "To think that which is, and to be, is one and the same", or, again, "Only that which can be thought, can be." From internal reasons I consider this, too, to be improbable. It would not only mean that Parmenides had expressed himself wrongly: he ought also to have reached entirely different conclusions. It is precisely the eternal and unchangeable which we cannot imagine under a sensuous form, and we can so imagine change and becoming. He is here speaking of thought itself and not of the content of thought.

The meaning of these three versions of the second proposition lies deeper. *Νοεῖν* is Thought as such; it is to be taken as *εἶναι*, and we must not take it one-sidedly as equivalent to the objective side of thought, but as the higher unity of the immediate datum in so far as in this higher entity subject and object are synthetized.

In fact, the distinction between the subject and the object of thought was not by any means foreign to Parmenides. The object of thought he calls οὐνεκεν ἐστὶ νόημα in distinction to the subject, which is *νοεῖν*. But thought in itself, which he identifies with *εἶναι*, is a higher unity in which subject and object are united into one. I cannot, at any rate, give any other interpretation to the words in which he expresses his third proposition: ταῦτόν ἐστὶ νοεῖν τε καὶ οὐνεκεν ἐστὶ νόημα.

In this proposition we can also see how Parmenides shifts the centre of his examination. He begins with supra-individual thought, which is identified with being, and he passes over to thought as subject, and to *the* thought, its content, and its objective meaning. He reaches the form of opposition into which thought is severed,

and he also reaches a narrower definition of his first abstract proposition about *εἶναι* and *μὴ εἶναι*.

The imagination of an object implies the positing of a relation which leads beyond the identification of *νοεῖν* with *εἶναι*. For Parmenides the object of imagination has existence only in so far as it is Thought: in so far as it manifests Opposition it points to something that lies beyond thought. This outward road, however, leads to illusion: taken as something *in itself* the object of imagination is mere appearance; it is the *μὴ εἶναι* in the more narrow and concrete sense.

Parmenides thus realized that we cannot go beyond the sphere of thought, or, more generally, of the facts of consciousness. All Being, and all In-itself, lies contained in the supra-individual and so to speak absolute *νοεῖν* or *νοῦς*. For Parmenides, much as for Xenophanes, *νοῦς* evidently is an all-comprehensive prime form which manifests itself in a multiplicity of individuals; and, in fact, like Xenophanes, Parmenides compares it with a well-rounded sphere.

Parmenides treats *νοεῖν* (or *εἶναι*) as One; and, indeed, it seems that this view constituted the foundation of another theorem for Parmenides, for Plato discusses it in great detail in his *Parmenides*, and Aristotle repeatedly quotes it, as for example, in the following form: *ἐν ᾗπαντα εἶναι τὰ ὄντα καὶ τοῦτο εἶναι τὸ ὄν* (All that is, is One, and this One is that which is).

At the same time this One is taken as equivalent to the Whole. Multiplicity is not denied: indeed, it is found as an immediate datum: but it is rendered possible only by the fact that the many are comprehended together into Oneness. Thus for Parmenides multiplicity comes to mean immediately the same thing as the One, *πᾶν* (or *πάντα*).

The theory of the *εἶναι* and the *μὴ εἶναι* bears a strong resemblance to the ancient Indian doctrine of the Brahma as the sum total of the whole of being, of the "One" and of truth, and to the doctrine of the world of show. From a very early date the whole world of appearance was treated in India as possessing, at best, truth of a lower order; and there seem to be certain indications to show that Parmenides was influenced by this doctrine. His somewhat obscure and contradictory attitude towards the world of appearance, of the *μὴ εἶναι*, might cause the impression that this part of his theory was not altogether original.

Parmenides was unable to give a clear statement of the real

importance of the world of the $\mu\eta\epsilon\acute{\iota}\nu\alpha\iota$. Certainly he attributes to it a deeper importance for our practical life, as follows from the fact that he attempts to give an orderly description of this world, and to discover the laws which govern it. He does not succeed in setting out a rigorous and abstract definition of this fundamental form: he does, however, give an impression of it in a series of pairs of loosely correlated forms, like light and darkness, either of which is the necessary condition of the other, warm and cold, etc. It is their reciprocal relation which determines the world-picture. Epistemologically, however, this description is evidently held by Parmenides to be no more than a more or less useful fiction.

ZENO, MELISSUS

The epistemological importance attributed to the world of imagination, which is treated as a fiction contradictory in itself, is a particularly important point in the theory of Parmenides. His disciple Zeno devotes all his powers to it. His aim is to find a strict proof to show that the world of our imagination in itself cannot exist. With this end in view he analyses the fundamental forms of our sensuous intuition—space, time, and the different senses (e.g. Hearing), devoting particular attention to motion. In this process he meets with the difficulties connected with the infinite divisibility and extensibility of space and of time. Indeed, the contradictions defy resolution which are reached if the world of sensuous imagination is taken as an independent thing in itself. Hence true being in the Eleatic sense cannot belong to this world.

Zeno failed in discovering fully the structure of Continuity. But he was the first to attack this fundamental and difficult question in an exact and scientific manner; and at the same time he attracted attention to the difficulties of the concept of infinity, which is closely allied to that of continuity. Most important of all, whereas all the earlier philosophers had proceeded intuitively, he was probably the first to give a scientific demonstration for a philosophical assertion. It would seem that the growth of the schools of the Sophists and Sceptics was due in the main to the stimulus which belonged to the doctrine and methods of Zeno. But Zeno did not develop or throw further light on the Parmenidean concept of Being.

Another disciple of Parmenides, Melissus, had attempted to

formulate the master's concept of being in a more rigorously scientific form, and to demonstrate the assertions immediately based on it. But he, too, failed to forge a link between this extremely abstract concept of Being and our living imagination, and consequently this concept at that time remained particularly difficult of apprehension. It seemed to be wholly unrelated to reality, even when it was taken in its narrower meaning as *νοεῖν* or as *νοῦς*, for even when identified with *εἶναι* this *νοεῖν* was intended to have a more universal meaning than that which is generally denoted by this term. There was no link as yet between it and our individual experience.

SOPHISTS, ATOMISTS, AND OTHERS

The element of opposition in the structure of our empirical world and the dual nature of our thought—which is closely dependent on it—had been placed in the foreground, although by different lines of approach, by Heraclitus and the Eleatics. Sophists like Protagoras and others drew certain practical and epistemological conclusions which end in a kind of relativism. A deeper penetration they did not achieve, and the main question at first was not much advanced. It was reserved to Plato to effect a nearer approach to the relation between the Heraclitean and the Parmenidean view. Plato laid emphasis on the deeper problem which is implicit in the Eleatic notion of Being, and made an attempt to reconcile the Parmenidean and the Heraclitean notions of Being. It was not until this had been done that the entirely abstract concepts of *εἶναι* and of *νοεῖν* first began a vigorous growth in the mind of Aristotle: we shall also see how fatal the Aristotelean formulation was to turn out for the further development.

In the age before Plato there were many thinkers besides the Pythagoreans, Heraclitus, and the Eleatics who grappled with the great fundamental questions. They all had the same object in view: to find the aptest expression for that which is to be regarded as the most universal fundamental form of the whole of Being and the sum of events. In each instance they found a more or less profound manifestation of the general form of opposition. The Atomists analysed the concept of space. They were aware of its unity as well as of the oppositions which it contains—that between plenum and void, inner and outer, finite and infinite, unity and multiplicity, and also of that "motion" in which all these contrasts

are united and resolved. Empedocles, Anaxagoras, and others found in love and hate the symbol of negation and strife, of attraction and repulsion. Spirit and matter, force and mass, and unity and multiplicity are other pairs of opposites which they treat as fundamental. But they all lacked a really comprehensive concept; and the forms of opposition on which they laid emphasis were mostly secondary and complex to such a degree that they were unsuited for a successful and far-reaching analysis. Generally the necessary inner inter-relatedness of the terms of the opposition did not even emerge: everything was instinctive groping and uncertainty.

3. The Philosophical Systems of the Ancients

General Remarks.

Plato. (a) The Problem of the "Parmenides"—"One" and "Being"—Significance of the "Parmenides". (b) The Ideas—God and Cosmos—the Form of Opposition—Manifestation of the Ideas in Reality.

Aristotle. Attitude to Parmenides—Substance—the *σύνολον*—His System of Opposites—Relation of Aristotle to Other Philosophers—Difficulties—Danger of Excessive Logical Distinctions.

Neo-Platonists. Common Foundation of Philosophy—the Prime Form in the Hymns of Synesius.

Augustine. His Importance. Descartes—Scepticism—First Certainty—Body and Soul—Space, Time, Ideas.

Scientific and rational philosophical systems did not begin to be formed until thinkers had learned how to apply a more exact logical definition and greater verbal precision to abstract concepts, and by their aid to set out on the way towards knowledge. In doing this they followed the example of mathematics, which at this period was developing into an exact science in Greece. A rudimentary rationalization of philosophical thought can be observed already with Zeno, Melissus, and others: Socrates was the successful master and guide. It was he who developed the inductive method of definition, made it common property, and thus prepared the ground for the mighty achievements of Plato and Aristotle. The former introduced a comprehensive analysis of concepts, in contradistinction to the essentially intuitive method of his predecessors, which made use of analysis only occasionally: Aristotle was the first to create a wide and exact terminology based on an extensive method of logical elucidation and distinction.

PLATO

Parmenides had laid a particular emphasis on the concept of Being; a concept which up to his time fulfilled an auxiliary function everywhere in human thought, but probably had never been taken completely abstractly by itself. Heraclitus at that period held the profoundest view about the question of the fundamental structure of the Whole, and interpreted the concept of Becoming as a synthesis of Being and not-Being; but even he does not appear to have isolated the concept of being as an independent intellectual structure. Parmenides gave to this concept a peculiar significance by combining it with the concept of the One as opposed to multiplicity and manifoldness. Thus at the same time he related it to the eternal and unchangeable substratum of the Whole: its contrary thus became, for him, $\mu\eta\ \epsilon\acute{\iota}\nu\alpha\iota$. The latter did not for him signify an absolute nothing: rather it is closely akin to the "Becoming" of Heraclitus and to the world of appearance in general. In so far as the latter is taken as falling apart into its multiplicity it is, compared with the One, mere Appearance.

It is true that Parmenides established a close relation between his concept of Being and other and narrower concepts, more especially with that of thought in the supra-individual sense and in the sense of the form of subject-object—an individual form. Nevertheless, the novel quality of his view of Being gave to this abstract concept a particularly prominent place among the ideas associated with his name.

For a long time it seemed that the idea of Being, in this one-sided formulation, would be condemned to remain sterile. Plato was the first to appreciate the importance of the questions which follow from this concept, and it was he who treated the One as the main characteristic of Parmenides' $\epsilon\acute{\iota}\nu\alpha\iota$. In the fragments which have come down to us this preference of the One over the other characteristics of the $\epsilon\acute{\iota}\nu\alpha\iota$ is not apparent, but Aristotle, too, treats the proposition that Being is One as one of the main propositions of Parmenides, and thus it may well be that Parmenides emphasized the One in some other context which has not come down to us.

Now Plato realized that the One by itself is unintelligible; of necessity it leads to its opposite, the Many, and it is in the Many alone that it attains its meaning. Indirectly the same is expressed by Parmenides when he describes the $\epsilon\acute{\iota}\nu\alpha\iota$ as being One and All at the same time. Further, it is clear that Plato was persuaded that

this his view is consonant with that of Parmenides, and that it was not his intention to represent the One as absolute and wholly detached from the Many. Accordingly, in his *Parmenides*, he attributes to Parmenides his own analysis of this concept.

In this analysis Plato begins from the concept of the One and that of Being, taking these concepts absolutely abstractly. Thus taken the One is the opposite of the Many and entirely excludes it. In this formulation One and Many would not be a pair of opposites each of which is the condition of the other: there would be a logical contradiction between them. The Many becomes a logical impossibility.—Evidently this was the common view of the theory of Parmenides. But the One, taken as absolute, is equally impossible. Now Plato shows that this concept of the One, as soon as the attempt is made to discuss it in every direction, necessarily leads to the Many, so that One and Many are each the condition of the other, and the One is at the same time Many, and yet, looked at from another point of view, is neither One nor Many. "Without the One there cannot be anything at all." He finally comes to the conclusion that "the One and also the Other ($\tau\acute{\alpha}\lambda\lambda\alpha$, Multiplicity), as well by itself as in relation to the other term, in every respect both is and appears and also is not and does not appear"—according to the point of view.

It may be taken for certain that such statements were not intended to lead to an epistemological nihilism: Plato merely wished to reject the erection of the One into an absolute principle as inadmissible and as incompatible with the spirit of Parmenides; Plato, much like Parmenides himself, was striving after an expression for the contradictory correlation of the One and the Many. Possibly he had in mind a kind of rational relativity, One and Many being incompatible and forming a contradiction only when each is taken absolutely by itself.

Parmenides was guilty of a formal mistake in laying a one-sided emphasis on Being in its aspect of one, eternal and unchangeable, and in severing it too radically from "appearance", which he called $\epsilon\acute{\iota}\nu\alpha\iota$. He did not sufficiently exclude the concept of an absolute One. The solution of the whole question is to be found in another direction: in the idea that One and Many are conceivable only as correlated terms which are merged in a higher concept as two expressions of the same One, each being the condition and the complement of the other. This much Parmenides saw at least implicitly, and he also saw implicitly that the prime form is not

exhausted in the correlation of One and Many, a correlation which, in fact, is one side only of the prime form.

In one direction Plato did succeed in disentangling the idea of Parmenides. He was unable to achieve a wider survey of the fundamental structure of our thought and to make an explicit exposition of it; but he did throw light on it at one point of particular importance. He shows that a perfectly rigorous logical advance leads us to antinomies as soon as one of two correlated universal concepts (like One or Many) is taken by itself, or absolutely. But he did not understand the full importance of his discovery. In the first instance he merely investigates the problem and places us face to face with it. He shows that such universal concepts as Being, One, and Many, if taken absolutely, are so many contradictions. At this point, however, the dialogue ends without any conclusions having been drawn from the facts which it has established, and without any indication as to how the most unsatisfactory result at which it arrives is to be dealt with. In this way it stimulates further thought.

The importance of the *Parmenides* consists in the posing of the problem and in its powerful stimulus towards its solution. The whole of its reasoning already clearly implies the direction in which a solution must be sought; and it is possible to discern in the distance a way which holds the mean between the excessive formal rigour of Parmenides' concepts, and the fluidity of Heraclitus. Even to-day Plato's *Parmenides* is frequently considered the greatest riddle in the history of philosophy. Hitherto the nearest approach to a correct appreciation has been made by E. Pfeleiderer.

Although Plato was unable to solve the problem of Parmenides and to establish a link between it and his own view, he was the first clearly and impressively to formulate one side of this question, and thus to prepare the ground for its solution. Nearly two thousand years had to pass before another important step was taken in this direction; then it was Nicolas of Cusa who elucidated in one direction the importance for our thought of the pure form of opposition. A definitive solution of the problem was only undertaken by Fichte and Hegel.

Plato was the author of a comprehensive view of the universe, which may be looked upon as an extension of the theories of Parmenides, and in which the fundamental idea of a natural order finds tolerably clear expression. Like Parmenides, Plato takes the essence of the universe to consist in the Eternal, Unchangeable

and One; but this One is not rigid. In the reality of the world of our experience this One is combined with the Many, and One and Many, universal and particular, are each the condition of the other and are given to us only together and by virtue of each other. It is this union of opposites in a higher unity which is Plato's prime form. This he calls the Idea. Since it is a union of unity and multiplicity he also compares it with Number, and in this respect he approaches closely to Pythagorean doctrines.

The Platonic concept of the Idea is largely identical with the concept of the idea which we found when developing the chain of concepts of Continuity. Plato does not, indeed, clearly perceive the deeper truths on which his fundamental concept rests, and he gives only the last link, seized upon intuitively, of the whole chain of concepts which leads to this concept: but this fundamental axiom of the Idea which Plato reached does express the same version of our prime form as that which we found in our own chain of concepts.

Plato offers two versions of his fundamental concept. In the one the pure idea is identified with the Eternal and Unchanging (or God), and in the other with the cosmos. The two are different aspects of one idea. The cosmos is the form in which the pure prime idea is manifested in Appearance.

The existence of these opposite variants is rendered possible, and receives an inner justification, through the opposition which forms their support—that between unity and multiplicity and between universal and particular; and, further, through the fact that the prime form, as follows from the principles of our analysis, can be projected in turn on the side of the One and the universal, and on that of the many and the particular.

In the cosmos the prime form manifests itself in the more concrete opposition between form and matter: the cosmos is the prime idea having become materialized, or matter penetrated by the prime idea. With Plato the concept of form and matter forms a somewhat complicated system: and the opposition between activity and passivity, where form is the subject, and matter the object, of the formative process, is an element of it. The idea of consciousness, too, plays its part, and to this extent the all-pervasive formative principle of the cosmos becomes the "world-soul". The human soul is an individualized form of this world-soul.

Throughout Plato deals in forms of opposition. On the one side we have unity, God, the Eternal, the Unchangeable, the Infinite,

the Perfect, form, world-soul, consciousness, thought, universal, and concept; on the other we find, as corresponding members of the opposition, multiplicity, cosmos, space, time, flux, finitude, matter, and determinate entities.

The plan of Plato's system consists in vertical gradation. The supreme and perfectly universal prime idea corresponds to the perfectly abstract prime form, whence the whole network of all the possible subordinate ideas can be derived as variants of the prime idea.

The Platonic theory of ideas is the first remarkable attempt to achieve a comprehensive, consistent, and logical representation of the prime form. The concepts with which Plato deals are, however, extremely complex, and he never succeeded in discovering the ultimate roots of the system of his ideas.

It has frequently been asserted that Plato took the ideas as a kind of substance or thing in itself. It may be presumed that the manner of his oral teaching contributed to this view: certain it is that Aristotle held this view of the theory of ideas. But the nature of Plato's arguments does not imply such a view. It is possible that Plato did contribute in further impressing an irrational concept of substance in current philosophy: the greatest share, however, belongs to Aristotle.

ARISTOTLE

The rational philosophy of the ancients culminated in Plato's disciple Aristotle, whose system in its main outlines closely resembles that of Parmenides. In both systems Being is the most universal concept, and Aristotle distinguishes it fairly definitely from the being of common speech. Metaphysics for Aristotle is the science of Being as such; like Parmenides he passes over immediately from Being to that which *is*; finally he goes still farther and forms the concept of Substance.

The development of his ideas proceeds in the following manner. Being (*εἶναι*) is generally identified with the full reality of the world of data, and, to this extent, with the truth. From *εἶναι* Aristotle reaches the concept of the *ὄν* (that which is) as soon as he becomes aware of the fundamental opposition of unity-and-multiplicity which is implicit in every datum. He speaks of the *ὄν* only when he desires to emphasize the unity (or *εἶναι*). *Ἔν* is used by Aristotle to denote anything that in any way contains multiplicity

out, from some point of view or another, is also taken as indissoluble. At the same time the concept of vertical gradation also plays into the concept of unity-multiplicity, so that with Aristotle the concept of unity is affected with a certain relativity *ab initio*. By means of an amalgamation between εἶναι and ἔν Aristotle reaches the concept of a substratum (ὑποκείμενον) of the manifold (or predicates), and from this point of view he calls the ὄν Substance (οὐσία). But substantiality, like unity, is taken in a relative sense. He admits a long hierarchy of substantiality which he traces right through to a ὑποκείμενον ἔσχατον.

By association the concept of Substance, when treated as the undifferentiated substratum (ὑποκείμενον), brings into action another form of opposition in Aristotle—that between the permanent and the mutable, or, expressed in a different order of terms, that between the necessary and the contingent, or the essential and the unessential. Thus substance comes to mean the “essential”, the οὐκ ἦν εἶναι. At the same time it also becomes the Universal (τὸ παθόλον), or that which can be defined by means of concepts (τὸ κατὰ τὸν λόγον), and thus it becomes an abstraction from the real (the ὄν ἅπλως or πρῶτως ὄν) in opposition to the Real, or Concrete, itself (τόδε τι ὄν).

This concept of substance is the first fundamental axiom of the system of Aristotle. Now this axiom is associated with extremely complicated forms of relation which are not fully explained, and, by itself, it would be condemned to remain sterile. The driving force for a further development is found in a transition to other forms of opposition.

Aristotle begins by assuming something which in a manner is the opposite of Being and Substance. When the occasion arises he calls it, like Parmenides, μὴ εἶναι. By this he means a relative non-being, which possesses a certain measure of reality; and from it he develops the concepts of potentiality and actuality (δύναμις and ἐνέργεια), which are very closely related to the concepts of matter and form (ὕλη and εἶδος). This new system of opposites contains the principle of every kind of development, and evolution, and becoming.

Aristotle was fully aware that these opposed terms were merely abstractions, and that by themselves they are meaningless. In reality we find them only in a state of union, which Aristotle calls the σύνολον, and it is this σύνολον which is complete substance in the proper sense.

According to the different points of view from which we look at it we find the following terms on one side of the opposition within the *σύνολον*: Being proper, form, actuality, activity, cause, purpose, unity; and corresponding to and united with them we find on the other side of the opposition relative not-Being, matter, potentiality, passivity, multiplicity. All the characteristics of each side are interconnected with one another. In order to find a characteristic of the *σύνολον* (of the whole of the universe) Aristotle groups all the characteristics of the one side abstractly together under the name of *πρῶτον εἶδος*, and those of the other under that of *πρώτη ὕλη*.

Closely connected with the concept of the *πρῶτον εἶδος* is that of *νοῦς*, by which is meant supra-individual thought, the absolute taken as unity of the Whole, and the sum total of the whole of actuality, of causality, and of Being. Considered by itself it is *νόησις νοήσεως*: thought and the object of thought in one, or, more simply, subject and object.

Thus we find that everywhere the fundamental notion of the Whole, as a system composed of opposites, is clearly manifested. It maintains itself even in the system of Aristotle, who believed that he could not work out this idea explicitly to the end since it seemed to be in conflict with his fundamental axiom of Substance.

In many places Aristotle explains his position with regard to the theories of the older philosophers. He is guided throughout by his axiomatic view of Substance, which he holds to be something of a uniform and independent nature; something which is the veritably existent and permanent substratum lying beneath the change and contingency of Appearance. This same view of Substance he then makes the foundation of the fundamental concepts of other thinkers, and as a result, in his discussion of their views, frequently meets with insuperable difficulties. He is, on the one hand, right in asserting that the Pythagorean Number and One (used as meaning something elementary or of the nature of a monad) cannot be Substance in the Aristotelean sense, that Substance, in his sense of the term, cannot at once be and not be, as with Heraclitus, and that contradictory determinations cannot be predicated of such a substance at the same time and in the same sense, and further, that hopeless contradictions arise if the Platonic ideas are taken as independent Aristotelean Substances. On the other hand, however, the imaginary error does not rest with the Pythagoreans, with Heraclitus, or with Plato, for the Aristotelean concept of Substance was foreign

to them, and even more so its employment as substratum for number, opposition, and the Idea.

In the course of his investigations Aristotle discovers a wealth of new facts, and introduces a surprising number of subtle logical distinctions. He is at no loss to find a terminology for them: but his concept of Substance is very complex, and his view of it not as clear as it should be. Naturally this leads to great difficulties, which Aristotle spares no pains to master. But the dust which is raised in the process blinds him, and eventually settles in other places. The influence of the teaching of Aristotle on his contemporaries and on later thinkers was none the less enormous—an influence which was rendered all the more powerful by the fact that the introduction of the Concrete, and with it the concept of Substance, easily adapts itself to the unsophisticated thought and speech of everyday. The unprecedented exactness and rigour of his investigations, and the wide scope of his view, caused his words for a long time to be looked upon as something like a divine revelation: and the amazing richness of the world in which he moved was sufficient material for the work of centuries. The numerous new and exact definitions which Aristotle used in connection with the concept of Substance contributed to strengthen it; but the hidden obscurities confused the picture and hampered a further advance.

No doubt the Aristotelean concepts had a certain inner justification; but, so long as the data on which they are based contained any element of obscurity, they misled thinkers into treating them as independent realities: a fate which they share with the majority of concepts which, while abstract, are inadequately defined. They are readily employed, because they prove handy within certain limits and offer to the thinking mind a provisional support: but in use they soon lose their inherent force. They become "empty" concepts which are toyed with at first, but come to be regarded as indispensable to thought as soon as they have penetrated into thought so far that expression seems to be impossible without them. They usually end by making abstractions concrete, thus leading to entities which are based on the concept of Substance for prototype. Once such a step has been taken, and this kind of personification has surreptitiously become a part of academic thought, it is difficult to get rid of it again. It leads to an illusory knowledge which is an insuperable barrier in the way of communication with other thinkers.

Through two thousand years we shall trace the disastrous influence

of the ingenious structure built by Aristotle on a Parmenidean foundation. We shall further see how Descartes undertook the deliberate destruction of the whole formal structure, and how in spite of this he failed in really freeing himself from the bondage of the traditional ideas.

THE NEO-PLATONISTS

Again and again the Ancients had attacked the same problem—that of finding the most apt expression for the prime form considered as the unity of two opposite terms each of which is the condition of the other. At the same time further elaboration of details in the systems had also been considered, and in these details numerous divergences appeared. The centre, however, throughout these ages was occupied, as it still is, by the one fundamental problem. Almost all the details about which divergent views are held lie in the region of complex but subsidiary forms, and in these regions a rational progress and a clear and complete understanding is difficult to reach: the main outline, however, is everywhere much the same.

The Neo-Platonists were aware that all systems of philosophy have a common fundamental outline. They attempted to reconcile the real or apparent differences between the systems, and more especially to bring about an amalgamation between the systems of Plato and Aristotle, and between them and the ancient Indian doctrines. It is with them that we first see the idea of relativism emerging. Ammonius Saccas, the founder of the Neo-Platonic school, is credited with the view that the theories of Plato and Aristotle are essentially in agreement; Hierocles thought that this agreement is very substantial; and Simplicius even went so far as to attempt to demonstrate this agreement in all the main points, even including the non-rational details.

The Neo-Platonists attributed particular importance to opposite terms like unity and multiplicity, and infinite and finite, where one member of the pair postulates the other. In the hymns of Synesius we find innumerable expressions by means of which it was attempted to describe the prime form, like *ἐνοτήτων ἕνας*;—*ἐν ἑνὸς πρότερον*; *ἐν καθ' ἑαυτόν* (prime unity); *μονὰς μονάδων* (prime monad); *μονὰς μονάδων, ἀπλοτήτας ἀκροτήτων, ἐνώσασα καὶ τεκοῦσα* (prime unity in which oppositions emerge and are reconciled); *πατήρ καὶ μάτηρ*; *Υἱὲ σεαυτοῦ* (symbolic forms of opposition); *μονὰς*

ἀριθμῶν; μονὰς ἢ δ' ἀριθμός; ἐν καὶ πάντα; ἐν ἀπάντων (unity with multiplicity); *νοῦς καὶ νοηρὸς, καὶ τὸ νοητὸν, καὶ πρὸ νοητοῦ* (supra-individual knowledge—unity of subject with object); *πάντων κέντρον* (pole of order); *ιδέων ἰδέα* (prime concept); *ἄλλο ἀπ' ἄλλου, διὰ δ' ἀλλήλων* (reciprocal interdependence).

All these are descriptions of the prime form in different variants. At the time of the Neo-Platonists they were taken as axioms: the connection subsisting between them was not explained, and accurate conclusions could not be drawn from them; but thinkers felt that they were in the presence of a piece of profound knowledge of the widest scope, and looked for the most adequate expression for it, without, however, coming to a satisfactory result. In the Christian Era scientists frequently gave a theological interpretation to the root-idea of the Neo-Platonists.

AUGUSTINE

The intermediate link between the Neo-Platonists and the mediæval philosophers is formed by Saint Augustine, a thinker of amazing versatility and intellectual acuteness. He was among the first to attempt to make use of philosophy in order to confirm theological and ecclesiastical dogma. This inevitably implies a certain element of force and caprice, but in spite of this he avoids as far as possible an exaggerated formalism, and evinces, especially in the elementary parts of his system, a remarkable feeling for the self-evidence of the propositions which he is seeking to establish. The system which was set up twelve centuries later by Descartes, and which is generally treated as the beginning of modern philosophy, is a repetition, exact almost in each detail, of the fundamental ideas of Augustine, and we must spend a little time on them for this if for no other reason.

For a time Augustine had adopted a scepticism which declared all our perceptions doubtful and recommended an abstention from judgments. Soon, however, he left this scepticism behind, exactly as Descartes was to do at a later period, being led to do so by the following consideration. When I experience a perception it may be doubted whether that which I perceive really exists, and whether it is really as it appears to be, or different: but one fact remains above doubt—the fact that I perceive. Stated more generally, the facts that I perceive, imagine, and doubt, or, in short, the facts that I think and that I am, are certain.

"I think" and "I am": these are two fundamental and parallel facts. I do not know what I am, nor what my thought is: but the fact that I am and that I think is immediately certain. The case is different with the objects of my sensuous perception; thus, for example, I perceive my body, but I am not certain of it in the same manner as I am certain of my thought. At first it is no more than a fiction, however useful.

On the other hand, there is something else which is equally certain with our existence and our thought—namely, truth as such. Without truth I could not be certain even of my own existence. With Augustine, much as with Aristotle, "truth" is almost identical with "Being". Augustine then proceeds to take truth and Being as absolute, and in this way reaches the concept of God, which means absolute truth and absolute Being. He also introduces some other elements into this concept—that of Substance, and that of the prime form or the prime idea in the Platonic sense.

Augustine again anticipates Descartes in inferring the reality of bodies from the existence of God. He next applies the concept of Substance to the notions of *body* and *thought*, and thus reaches the dualism of body and soul.

Time and space he does not treat as existing independently of the world, but as the inner proportion and measure of this world and of events in general, existing only in and with the world. The temporal persistence of the world he treats as a prolonged act of creation. In this respect, too, Descartes follows him. To the "ideas" he attributes much the same meaning as Plato: God is what may be called the sum total of these ideas. A strong element of this view survives in the Cartesian theory of the ideas.

4. The Development of the Concept of Substance in Mediæval Philosophy

The Controversy about Universals—Its Connection with the Problem of Substance—Concept and Thing—Formalism of Concepts—Its Influence on the Concept of Substance—Roger Bacon.

Thomas Aquinas—His Theory of Substance—Epistemological Theories—Dogmatism—Importance of the Problem of the Substance.

The earlier philosophers of the Middle Ages followed Plato, the later ones Aristotle. About the meaning of the Ideas (or Universals) a controversy arose which raged for centuries the question being

whether or not the universal ideas possess an independent existence apart from things. The controversy was based on the logical distinctions of Aristotle as handed down by Porphyrius the Neo-Platonist, and the whole controversy seems to have arisen out of a single remark of Porphyrius. It was a quarrel which was never settled definitively, and differences of opinion still exist; but the question no longer occupies the foreground. The fundamental question is usually formulated in a different manner, so that the mediæval form of the question has lost most of its importance; and indeed, the whole question collapses as soon as the facts of human thought are sufficiently illuminated. Our natural order, treated as the fundamental order of human thought, indicates the way.

As formulated at an earlier date, the question was based implicitly on the question of Substantiality together with the question of the "prius", whether causal, logical, or of some other nature. It is easy to see that the concept of Substance, even if its applicability to concrete realities is admitted, cannot be applied to universals, still less to such narrower concepts as beauty, justice, etc., and that a classification based on the idea of substance, and effecting a distinction between the more universal concept and the concrete object, yields no meaning at all, and is simply a play with words resting on a misapplication of the word *Substance*. The concept and the image of a thing are based on the same foundation and are closely interconnected: they are valid according to the point of view for which they are employed: but validity and a measure of reality do not confer the status of substance. If both are valid it does not follow that they are valid apart from each other, and that they are or can be separated under the category of substance.

A narrower framing of the question does not take us farther. It may be asked which is prius, concept, or thing. But there is no prius, and both are given together in one entity. All that we can say is that special concepts like space, etc., and the more concrete ideas in the Platonic sense, are fragments of the prime idea or of the concept of the Whole. They are fragments, incomplete in themselves, of a higher totality on which our contemplation fixes arbitrarily, and thus it might be said in a sense that this higher totality is the prius, since the narrower concepts are formed out of it in accordance with our requirements. But this is not the issue in the controversy about the Universals, and, besides, the narrower concepts are not wholly arbitrary structures. They are contained implicitly in the concept of the Whole, and are based on a superior

and indivisible idea within which the universe is comprehended. They are manifestations of the Whole, and as such they have an objective validity.

The farther we penetrate into the region of the true universals, the more we perceive that all these concepts are amalgamated into one indissoluble whole. We have seen how each of the most universal concepts denotes the same Whole, but from a different point of view in each instance; or in a different "projection". Ultimately the same also applies to each of the more concrete concepts: if it is fully apprehended each concept reflects the Whole: only we are as a rule unable to obtain a full grasp of its connection with the Whole. And what is true of the more concrete concepts is true in a very similar way of "things": they are fragments taken from the "All and One", and are reflections of the Whole. It depends entirely on the point of view and on the manner of our representation what appears as original in this complex of concepts and what as derivative, and the manner of representation rests with us. There is nothing primary or secondary in itself in the interconnection of universals and things: the application of the concept of substance to the different concepts is an empty play with words. Thus the whole question of the universal collapses.

It was, perhaps, a dim feeling that the mistake lay in the manner in which the question was put which led to an abandonment of the problem, although the conflict of opinions still finds expression everywhere, while the ideas on which it is based are changed. The prominent position occupied by the controversy at an earlier time is largely due to the formalism which was applied to concepts, a formalism which was the result of the thorough differentiation of concepts introduced by Aristotle. This differentiation of concepts led to a premature crystallization of the concepts before sufficient light had been thrown on their interconnection. No such light was thrown by the controversy about the universals, and the only result was that the concepts, in spite of their inherent obscurity, were given a more important place in the minds of schoolmen, so that in the end they came to be taken as ranking practically with the non-rational data of nature.

The concept of the universals is due to Plato; but the question which occupied the foreground in the Middle Ages is of no importance with him. It was a one-sided and over-subtle refinement of these notions which led to that formal view of Being, Actuality, and Substance which was destined to obscure the outlook for so

long a time. In the end these concepts and their derivatives practically became axioms, treated as fixed foundations of philosophical thinking and even as ruling the processes of thought.

The wall which bounded the horizon was rendered still more unscalable by the amalgamation of philosophy with theology and various systems of ecclesiastical dogma. Sometimes the theological concept of God and the dogmas were actually treated as axioms, and were given a position at the head of the system. As a result many concepts, notably that of Substance, became progressively more one-sided and were further removed from experience. The resulting difficulties played their part in causing philosophy to be lost in mystical dreamings.

For this reason we admire Roger Bacon, who in the XIIIth Century attempted to base science on experience. We shall revert to him in another context. But we may also admire men like Thomas Aquinas. He worked out his system with the greatest intellectual acuteness and confined the spirit of the Middle Ages in rational forms adapted for academic teaching—forms which endured for centuries and are in part retained to-day by modern schoolmen.

With regard to the form of its exposition the system of Aquinas and his followers was probably the most finished product of the Middle Ages. Indeed, it is certain that Thomas Aquinas was one of the keenest intellects of all time. But he was completely dominated by the traditional manner of thought, the theological views and the ecclesiastical dogmas. He introduced into the very beginning of his doctrine an axiomatic belief in God and dogma, and hence imported into his system so many irrational and obstructive elements, handed down by the tradition of centuries, that a free development was practically impossible.

Aquinas closely follows Aristotle. He treats his works almost as a revelation, and his logical distinctions resemble those of Aristotle. His aim is to formulate his concepts in the neatest possible manner and to delimit them in every direction, but in spite of this he fails to reach a solid foundation: in the foundation on which his concepts are built up there remains a wide non-rational stratum. For us it is of particular interest here to note that it is precisely in the region of his most universal concepts that he is led to pairs of terms which are more or less definitely opposites, or, at any rate, are correlated; and these are the essential basis of his ideas. A similar system may be found with his master, Albertus Magnus; neither, however, had

discovered explicitly the fundamental importance of the form of opposition.

After Thomas Aquinas it became the task of philosophy to throw light on the reciprocal interrelation of things, and hence also on the inner order of the Whole. In order to reach such an order some fundamental concept of supreme universality, on which it is possible to fall back, must be found. Such a concept must also be perfectly clear in itself.

This fundamental concept—which is of an axiomatic nature—is Being. Aquinas proceeds to look for different forms in which Being is manifested and in which that of which Being can be predicated can enter into relations. Thus he reaches universals like *Substance*, that is, that which is for itself; *thing*, which is the essentiality of that which is; *unity*, or that which is, and is undivided; *truth*, or the agreement between that which is and reason. In this way he adopts a number of concepts without explaining their ultimate nature.

His concept of Substance is particularly important. In its most general form it is “first” substance; this concept, then, is divided into two opposites, the formative principle and a correlated term which stands over against it, and to which Aquinas gives the name of matter in so far as it refers to bodily objects.

Next he establishes an opposition between material and immaterial things. The two terms of this opposition he imagines as wholly unrelated substances. Two kinds of “forms” correspond to them, material forms and subsistent forms. In things he further distinguishes between substance and accident, and between substantial and accidental forms relating to them.

In spite of his formalism, Aquinas penetrated deep into the fundamental structure of our experience. This appears from the manner in which he describes the facts of the human faculty for cognition, a description which in many details resembles the theories of Locke and Kant. Cognition, according to his theory, begins immediately with sense-perception, and hence is based on experience. In the process of cognition the activity of the understanding collaborates with the passivity and receptivity of the sensuous faculty. The way in which an image actually is brought about is described very much in the manner of Kant. The outer senses are passive to the impression, which next is taken up by the active understanding and thus becomes an actual image, which as such is a passive state of our faculty of apprehension. It would

seem that Aquinas postulated certain universal forms for this type of apprehension: forms which are entirely unrelated to innate ideas, but have a certain kinship with the Kantian categories.

Aquinas repeatedly remarks that cognition is governed by the peculiar conditions of the faculty of cognition. It is thus of a subjective nature. He expressly distinguishes between the image, as manner of thinking, and the object of which an image subsists, as a property of a thing; in other words, between a subjective and an objective side of the image. Considered as a way of thinking, it is non-material; as thing, it is material. The image as a modification of the mind or as picture is not the thing itself; it is a kind of means for the representation of the thing. It has an objective meaning, like a golden statue, which represents the outward form of a man although it is not a man itself. However, in spite of numerous ways in which he tries to formulate the matter, Aquinas does not succeed in giving a satisfactory account of the relation between the actual thing and its image.

Although there are many elements of greatness in his doctrine, he is completely under the influence of religious and dogmatic axioms, and the manner of his teaching, and his elaborate logical distinctions, were of a nature to hinder rather than to promote a further development and elaboration of his system. The formation of formal concepts was not accompanied by an equally comprehensive elucidation and interrelation of ideas. Nevertheless, his influence on thought was very great; in the main it was probably due to the persuasive force of the care and accuracy with which he pursued his investigations, and to the rigorously academic form in which he presented its results.

It was the formalistic version of the concept of Substance which probably had the most adverse influence on the development of philosophical thought. In Aquinas it reached its most extreme formulation. At the end of an evolutionary series lasting nearly two thousand years the concept of Substance had become rooted more and more firmly in scientific thought; a full, rigid, and orderly terminology had been introduced into current speech, and in this way the whole of the formal structure had been impressed upon the consciousness of each growing generation of thinkers. It took over three hundred years to liberate thought from these bonds.

It is not contended, of course, that the concept of substance has no meaning at all as applied to reality; indeed, in the first part of

this book its derivation was worked out. There, however, we found that it is a complex form in which the prime relation manifests itself; it is immanent and can be exactly defined, whereas formerly it was kept separate from "properties", so that Substance appeared as a mysterious something standing behind everything that lies within our reach. To this something it was the custom exclusively to attribute independence, real existence and activity, transcendent actuality, etc. It was this exclusive attribution which contained the danger.

A fresh breath came with Nicolas of Cusa, to whom we now propose to devote some space.

5. Nicolas of Cusa. His Theory of Opposites

General Description of his System.

- (a) The Prime Form—Unity of Opposites—Prime Determinateness—Unity and Multiplicity—The Prime Form as Liminal Concept.
- (b) Relation between Prime Form and Plenitude—"Unfolding"—Prime Form and Plenitude as the Two Poles of Contemplation.
- (c) Truth.
- (d) Things as Relative Structures.

Appreciation of his System—Hints of Relativism.

Giordano Bruno—Jakob Böhme. Unity of Opposites. Consciousness.

In order to find a foundation for his system, Nicolas of Cusa went back to the prime form in its purity. He understood its importance and gave a surprisingly accurate description of it. For the first time in the history of philosophy the prime form appears as a pure form of relation combined with the prime determinateness. It is possible that Heraclitus, and certain that the Neo-Platonists, influenced Nicolas of Cusa; but he far excelled them in profundity, consistency and logical exactness.

The prime form he calls God. By this he does not mean some special substantial being, distinct from the world in the theological sense; at every crucial point he describes the concept of God in exactly the same way in which we spoke of a prime form underlying the whole of experience. His definition of this prime form which he calls God is quite abstract: in the first instance, as we shall see, he defines it as a pure form of relation. Thus its relation to the empirical world is not that between creator and creature;

on the contrary, he expressly treats the world as the immanent "unfolding" of the prime form. The one-sided concept of Substance as prevalent in the Middle Ages passes into the background.

It is difficult to understand how Nicolas of Cusa came to be permitted, five hundred years ago, to publish such a doctrine in numerous works without being called to account, except on the assumption that he was saved by the profundity of his teaching, his high ecclesiastical office, and especially by the fact that wherever it was compatible with his fundamental view he introduced into his philosophy the dogma of the Church.

The following is an outline of his theory.

In the prime form the opposites unite into an immediate and absolute unity, and it is this unity of opposites which properly constitutes the prime form. At the same time it is the most universal form of the Whole.

Unity of opposites is the prime relation. Together with this relation the prime form also contains prime determinateness, to which Nicolas of Cusa gives the name of limit. From it follows the determinateness of every Existent that unfolds out of the prime form.

The prime determinateness also gives us multiplicity. This is a united multiplicity; and Nicolas of Cusa appeals to Plato, who had shown in the *Parmenides* that no multiplicity is possible without an original unity. Number (i.e. multiplicity) emerges out of unity: it is the unfolding of the force of unity in which the Whole is held together, and out of which it develops progressively. We shall soon see what is the nature of the relation between the prime form and Plenitude.

He next attempts to render this prime form more intelligible, asserting that it is a liminal concept, lying at the very limit of the power of our understanding. The coalescing of opposites he tries to make clear by mathematical considerations, and more particularly by means of a consideration of the infinitely great and the infinitely little, whereby he attempts to show that it lies within the compass of understanding to grasp that two absolutely contradictory ideas can still be merged together. His comparisons do not completely hit the centre of the problem; but no comparison

can ever be entirely apt, and the general tenor of his meaning is clear.

Out of the prime form the Whole unfolds itself—an expression which has a twofold meaning with Nicolas of Cusa, being used in a logical and analytical, and in an ontological sense. The process of unfolding takes place by virtue of the original imposition of limits (that is, the prime determinateness), and by virtue of the severance of the unity into opposites which follows thence. It is this severance of the prime form into opposites which reveals the immanent unity of the prime form.

In the prime form the opposites are one. In the Whole they fall apart and stand opposed to one another, and for this reason the prime form is called the *complication* of all things, while the Whole is called the *explication* of the prime form. These are two aspects of the same fact.

In a sense both the prime form and Plenitude are infinite, the prime form in a negative and Plenitude in a privative sense. The prime form and Plenitude are, in a manner, the two poles from which the survey is made, the prime form being the pole of unity, and Plenitude the pole which stands opposed to it.

In these two terminal poles the whole of truth lies contained: in the prime form in its purity, and in the perfected unfolding of the prime form, where it has become Plenitude. Between them the various relative views have their place. Among these Nicolas of Cusa mentions our human apprehension, which depends to a great extent on the condition of the individual; and contrasts it with absolute intuition, which can comprehend Unity and Plenitude in one glance but can never belong to men, who are finite individuals.

In the course of the unfolding of the Whole the fundamental form, that of opposition, prevails everywhere and is everywhere repeated. Hence every object is a mirror in which the prime form, and the Whole together with all its determinatenesses, is mirrored. All is One, and One is All. Man, too, is the Whole: he is a microcosm; but man is also the prime form—he is God. These assertions, however, are not true absolutely, but only relatively.

Each individual is the whole of the universe represented in a

definite "contracted" form, and the whole of the universe is contained in each individual.

Such in its main outlines is the theory of Nicolas of Cusa. We see that he fully understood the prime form and its importance, and that, although he did not succeed in effecting an exhaustive analysis, he was able to draw important conclusions. His writings contain many other notions which fit in surprisingly well with our natural order. Thus he speaks of the thinking entity, the object of thought, and abstract thought as being all of one nature, and it would thus appear that he was striving after an expression for the union of, and relation between, subject and object. The prototype of the whole of the monadology can be seen in his writings, and its foundation is far profounder than that which it was to receive centuries later with Leibniz.

The works of Nicolas of Cusa are not easy reading. They are full of mystical notions, and at the same time he is striving throughout to adapt himself as far as possible to the prevalent theological views and ecclesiastical dogmas. Where he fails in doing so he occasionally sacrifices to dogma even his most clearly asserted and most frequent tenets or tries to effect a compromise between his own and the prevalent point of view. Nevertheless, the fundamental ideas, as I have described them above, are found everywhere clearly and unequivocally expressed, and expressed in the greatest variety of forms.

It would also appear that the idea of relativism was not entirely foreign to Nicolas of Cusa. Thus, for example, he holds that in the different philosophies the essential common characteristics should be considered rather than the differences. This view was particularly notable at a time when such philosophies generally had a religious foundation, and the conflict between thinkers was violent and uncompromising where the most insignificant points of dogma were at stake. We may rest assured that his confidence was due to the profound insight which he obtained in this way; and it was by this means that he came nearer to a natural order of knowledge than all of his predecessors and many of those who followed him.

Nicolas of Cusa was far in advance of his time, and it may be doubted whether he was rightly understood by his age. His ideas

however, continued to exert an influence, and Giordano Bruno and Leibniz attempted to develop them further. The doctrine of the former, who flourished a century and a half later, was spiritually akin to that of Nicolas of Cusa, and he had to suffer for it at the stake.

During the same period as Giordano Bruno, Jakob Böhme underwent a violent persecution for his doctrines. It may be doubted whether he was influenced by Nicolas of Cusa; he was a simple, uninstructed man, a cobbler by trade—a dreamer who read the works of mystics and had ideas of his own, which he noted down in a quaint phraseology. But now and then flashes of light burst from the gloomy fabric of his ideas, which show that he was pursuing a practicable road.

His guiding idea was the opposition of the whole of Being and Essence, and of Cognition, an inner and fundamental opposition which recurs everywhere. Nothing can be revealed save by conflict: "In yea and nay all things consist." The cleavage of the One into opposites is treated by him as the immanent and fundamental form of the world, and he calls it the essence of all essences, or God. "The essence of all essences is one, but at its birth it is severed into two principles." These principles are the terms of an opposition. Often he describes them figuratively, calling them *light* or *fire*. At other times he describes the unity of opposites as a pure form of relation; and throughout he insists on the fundamental nature and the inner necessity of this form, and on the indissoluble nature of the bond by which the related terms are united.

We are more particularly in sympathy with Böhme by reason of the fact that he is quite clearly aware that the essence of consciousness and cognition consists in opposition. "No thing shall be revealed unto itself without conflict, for if there is nothing that lies in conflict with it, it passes away for ever, and never returns to itself; and if it passes back into itself only inasmuch as it passed out of itself, then it knows nothing of its original state." "*One* has nothing within itself, save only if it doudles itself, so that it becomes *two*; also it cannot experience itself in unity, but in duality it does experience itself." However, it must not be forgotten that his intelligible utterances lie buried under a mass of mystical confusion.

6. The Awakening of the Scientific Mind

(a) Intellectual state of the Middle Ages.

Relation to Nature and to Experience—Alienation from Reality—Superstition—Science and the Tutelage of the Church.

Roger Bacon, a Prophet—His Postulates: a Scientific Conscience—Intellectual Training—Languages—Observation—Mathematics—Technology—Humanism.

The Age of the Reformation—Persistence of Superstition—Causes—Hostility to Innovation—Insensibility—Brutality—Treatment of Copernicus, Giordano Bruno, Galileo—Roots of the Reformation—Brief Description of the Mediæval Spirit.

The end of the XVth and the beginning of the XVIth Century were a period of ferment. Everywhere there was confusion: in every sphere of intellectual life in Europe an unprecedented change was preparing. Compared with the intellectual event in its totality the religious Reformation was a secondary phenomenon, although it did make the deepest impression on the body of the people and soon had the gravest political consequences.

In order to understand the events of that period correctly and to throw light on the sources from which this development drew its driving force, we must make an attempt to imagine the peculiar spiritual state of mankind at that crucial moment. We shall succeed in this most easily if we attempt to understand the attitude which men took up at that period to nature and to experience.

Men behaved almost as though they had been prevented by a certain modesty from interrogating and exploring nature. Such a method seems to have been regarded as unscientific and even as dangerous. Understanding was looked for within the mind, and it was held that logical speculation alone would provide the key to every secret; nor did thinkers hesitate gravely to discuss, with the help of this sole instrument, questions that had but the remotest relation to actuality.

Even where men experienced an impulse to discover the secrets of nature, they allowed themselves to be guided by arbitrary fragments of imagination. They pursued Astrology in order to penetrate into the future, alchemy in order to make gold, and magic in order to compel the world of spirits to their personal service: the monstrous fury which led to the persecution of witches was the last and most terrible result of this long-enduring aberration.

For centuries the volume of Aristotle was the book of books, and no need was felt to go beyond such natural science as he

possessed, although it had been acquired fifteen hundred years ago. The earth was considered the centre of the universe, and man the most perfect creature of God, capable of understanding all things, if only he would make a right use of his intellectual faculty. This right use first and foremost consisted in the understanding of God and of the dogmas of the Church, and besides this everything else was insignificant.

It is true that towards the end of the Middle Ages there was a vigorous intellectual life. There were numerous and flourishing universities, and thousands of scholars travelled from country to country in order to stay where they could hear the teachers who had the highest reputation. Each university was a separate polity, having its own laws and its own liberties.

On the other hand, most of the universities were ecclesiastical foundations, and theology was counted the science of sciences: other sciences had to be subordinated to it. There was complete liberty to teach and to hear; but in the background the inquisition lay in wait, and the doctrine of the Church was at once supreme, and tainted by horrible superstition, like the belief in witches. The Church was allied with the secular power, and terrible penalties threatened those who ventured to stray beyond the narrow limits of the ecclesiastical mind. Under such guidance there was no place for a free science. Every innovation was suspect, and the one task thought proper for philosophy was to demonstrate the dogmas of the Church.

Already in the XIIIth Century a champion arose against this mediæval spirit. With passionate words and with uncompromising sincerity Roger Bacon castigated the degeneracy of his age and tried to find the causes of the plight of science. He spared none, and his attacks included the members of his own Order. Again and again he was imprisoned, and for centuries his works were neglected, although he had fearlessly proclaimed his views for decades. The charges which he brought against his time were those of dullness, sensuousness, lack of culture, a blind belief in authority, and an attachment to custom and prejudice; and to this intellectual servility was added the destruction of the liberty of thought and of speech.

The greatest impediment, however, in the way of progress he saw in a lack of a sense of responsibility in the assertions made by thinkers. The fear of appearing ignorant drove men to pass

judgment about things of which they knew nothing, and they preferred to speak nonsense rather than appear ignorant. Closely allied to this mental attitude there was the rejection of experience and of scientific observation.

Roger Bacon begins by recommending to his contemporaries, both ethically and scientifically, the example of the ancient philosophers, emphasizing particularly the study of languages and of classical literature. A knowledge of Greek seemed absolutely essential; and it was hoped that a training of the sense of language would be accompanied by a sharpening of the intellect.

Scientific investigation was to be based on observation and experience. His chief instrument is mathematics, and to it Roger Bacon devotes particular care, assigning to it pride of place among the sciences, since it is the main support of them all.

He spent much time on the study of natural science. He observed plants and animals, wrote much on the improvement of the calendar, and essayed a theory of the tides. He was also the first to lay down the outlines of a science of optics, collecting observations on the phenomena of radiation, reflection and refraction, grasping the laws of the rainbow, and connecting it with other spectral phenomena. He made use of magnifying-glasses, and it seems that he constructed a kind of telescope. He was also acquainted with the camera obscura.

Admittedly he also believed in the philosopher's stone, the elixir of life, and in the influence of the heavenly bodies on human fate. But these were not articles of belief, but questions to which he wished to apply scientific methods of experiment. "Magic" he attacked vigorously because he saw that it was scientifically untenable.

It is characteristic of the mental attitude of Roger Bacon that he never leaves out of sight the practical application of his discoveries, and engineering is one of the most important divisions of his "Geometry". Agriculture, surveying, town-planning, and architecture, as well as fortifications and engines of defence, were among his subjects, and he further deals with instruments for measuring, scientific apparatus, and the like. He also had imaginative visions of flying-machines, power-driven cars, and submarine boats.

All the persuasion of Roger Bacon did not succeed in drawing his contemporaries from their downward path. But, although he exercised no influence, it may be due in part to him that after his

time Greek and Roman history and letters were studied more and more, a movement which grew steadily in importance in the course of the XIVth and XVth Centuries. It stimulated slumbering thought and played its part in bringing about a healthier state of mind.

By the beginning of the XVIth Century the preparation had advanced so far that numerous classes rejected the tutelage of the Church. But this did not suffice to give them a true science, and the reformers themselves were still held fast in mediæval ways of thought. Their belief in devil and witches was no less solid than that of their opponents, and in questions of natural science it was the Old Testament which was the arbiter.

What was considered natural knowledge in that age was no better than old wives' tales and superstitious dreaming for the most part. Now and again an attack was made on Astrology, Alchemy, and Magic, but they were not banished from the universities; and the state of medicine, which most of all was in need of a knowledge of nature, was the worst of all. Here and there a spark of light might be seen, but generally darkest superstition prevailed.

This condition was not improved when, in the XVIth Century, the universities were taken over by the State; and many of them sank even lower. Princes did not understand what was needed: it was a sorry period. Internal confusion and unceasing religious strife distracted attention from the real issue. Plague succeeded plague, decimating and brutalizing mankind. All this contributed in confirming the existing mental attitude until stagnation all but supervened. Superstition, miracle-mongering, quackery, and deceit of every kind flourished, while new knowledge was opposed by every class and by every means. Dullness and stupidity ruled, a spirit antagonistic to any experience, and a sense for the facts of the outer world was entirely suppressed. The very craftsmen revolted against the slightest innovation in their trade. Once there had been good reasons which led them to form guilds; but by the end of the Middle Ages these had become hotbeds of cupidity and folly. At the beginning of the XVIth Century the bitterest complaints became loud; but a struggle lasting for centuries was needed to overcome this madness.

It is this mental attitude that explains the unparalleled brutality, a brutality we moderns can hardly understand, which until recent times caused suspects to be tortured, a practice followed not only

by the Inquisition, but also by the secular courts of all countries. The punishments inflicted by the courts and in schools, and the tortures practised in guilds and other communities, were equally savage. In this age the slave trade reached its most flourishing state.

In view of this state of mind, it is easy to imagine the vast impression that was created when Copernicus upset the old theory which treated the world as the centre of the universe and made it one among a number of planets. Copernicus died before his work appeared in print; but Giordano Bruno, who, besides other heretical views on the nature of the universe, also held the Copernican doctrine, was burned to death at Rome by order of the Inquisition. Galileo further elaborated and developed the theories of Copernicus, and was compelled by the Inquisition ninety years after the death of the latter to abjure and renounce his "errors and heresies" unless he wished to share the fate of Giordano Bruno.

The sentence passed on Galileo must not be regarded as the error of his judges or as the result of a certain religious view; it was the spirit of mediæval mankind that pronounced judgment, and the sentence serves to show how deeply a frame of mind which seems so strange to us to-day was rooted at that time. It was the Catholic Church, in all its panoply of power, that pronounced the sentence, but it was a sentence that had the support of the mass of instructed opinion, quite apart from religious views.

The nature of the opinions held at that time, and for a long time to come, may best be inferred from the fact that for more than a century after this judgment had been delivered the secular power permitted its judges—who were men of culture—to employ torture of the most fiendish kind in order to draw a confession from suspected witches and sorcerers who had been the victims of some insane accusation, and then, the confession once obtained, to do these wretches miserably to death. A generation to whose choicer spirits such methods seemed natural and reasonable might well be expected to applaud almost unanimously the sentence passed on Giordano Bruno and on Galileo.

The mental attitude of that age might be summed up in the statement that there was a complete want of any appreciation for the evidence of an assertion—the same want that is often found in children. With it went extremely ill-developed powers of observation. This was the foundation on which was based a habit of

thought which had no regard for nature or experience, operating either with wild fancies or with thin-spun intellectual speculations, and experiencing little desire to prove their validity.

There was no real standard for truth and the value of evidence, and accordingly men were inclined by their individual disposition either to a blind belief in authority or to an over-confident reliance on ill-founded fancies. It was the same spirit on which Mahomedanism flourished, which destroyed the famous libraries of Alexandria and Cordova, ruined ancient civilizations in the new continents, and substituted for the observation of nature astrology, magic, and the belief in witches. It was not the spirit of any one religion: it was the spirit of an age. The authors of the reformation were equally under its influence, and Luther and Melancthon rejected the doctrines of Copernicus on the ground that they were at variance with the teaching of the Old Testament. Luther believed in the bodily presence and the baneful influence of the devil as sincerely as did for centuries after him the mass of the cultured world and of the temporal authorities both in Germany and elsewhere. They all were the children of their age, and they all wanted intellectual training and an example which they might follow.

This, then, was the spirit which rejected Copernicus, sent Giordano Bruno to the stake, and compelled Galileo to perjure himself.

(b) Descartes

His Relation to the Mediæval Spirit—His Remedies: (1) Training of the Faculty of Weighing Evidence; (2) Rules for the Explanation of Difficult Questions; (3) Methodical Removal of the Undemonstrated; (4) Deduction from a Single Unassailable and Fundamental Idea; (5) Induction from the Observation of Nature—Importance of Descartes.

Descartes and his Works—Contemporary Science—His Plan—Elementary Rules—Systematic Scepticism and the "Fixed Point"—Induction and Deduction—Experiment.

Dependence of Descartes on Scholasticism.

His Theory—First Principle—The System of Axioms—Limitations—Fundamental Concepts—Irrational Principles.

"God" and "Truth"—The Importance of the "I Am"—Substantialization of the Ego—Twofold Relation of the Ego—Substantial Dualism—Solution of the Problem of Opposition.

Bacon—Spinoza's Concept of Substance—Leibniz's Concept of Substance.

Descartes was a contemporary of Galileo. He was a man of high talents, orthodox piety, and imbued with the scholastic view of the universe. For many years he had striven to provide a new

foundation for philosophy, mathematics, and natural science, and among his works there was one in which he treated the world as a planet and attempted to prove that there were simple natural laws by the operation of which the whole of the solar system must have developed out of complete chaos. When he learned of the condemnation of Galileo, he was on the point of destroying his papers. He has recorded that he was aware of nothing in the works of Galileo that he could have suspected of being harmful to Church or State. But now, he says, "I could not but fear that among my opinions, too, there might be errors, although I had ever sought to give credence to no opinion for which I had no certain proof, and to write nothing that could be harmful to any man". Fortunately Descartes resolved some years later to publish a part at least of his great work; the fragment which he published was of the utmost importance in the intellectual evolution of mankind.

It may safely be asserted that he had judged the intellectual condition of his age more clearly than any of his contemporaries, and that he worked for a liberation of human understanding with a more deliberate aim than any of them. He has occasionally been called the father of modern philosophy. But if this is true, it is not so by virtue of the results of his philosophical studies, for his own doctrine ultimately came to much the same as that of St. Augustine as far as the content was concerned. He did, however, clearly understand the essential task which was facing mankind; he set up a new goal for understanding, and showed the road which leads to it. This work was of the greatest importance for subsequent developments. Further, it is exceedingly interesting to observe the manner in which he solved his problems. By such an observation we learn where the psychological difficulties lay at that critical period; and this is the chief reason why we must spend some further time on Descartes.

Descartes gives a clear description of the intellectual state of his age. We have already seen that its main characteristics consisted in insufficient appreciation of the validity of an assertion and, in close connection with this, in an inadequate power of observation.

The following remedies are suggested by Descartes.

- i. The sense of evidence (or *lumen naturale*) must be trained, and a keener sense of responsibility in making scientific assertions must be implanted. This can be effected only by means of methodical training, and the best method is to collect experience of the facts

of the universe, since every intellectual inaccuracy and every faulty syllogism is punished most quickly and severely in the events of practical life. For this reason Descartes himself undertook long journeys, took part in campaigns, and practised diverse crafts—all in order to gather experience; and it was not until he had completed this training that he withdrew into solitude in order to elaborate the theories which in part had already taken shape.

2. Descartes gives certain rules to insure against errors and to give regular assistance to the sense of evidence in the judgment of difficult questions. These rules amount to a recommendation that assent to a judgment shall be suspended until the matter has been cleared up so far that doubt is out of the question and there is no possibility of anticipated judgment or prejudice. In order to bring about the necessary elucidation every complex question is to be analysed into single questions, and everything that is relevant to the judging of the problem is to be arranged in a clear and orderly manner.

3. He proposes to sweep away the whole of the world of concepts and beliefs, in so far as these are traditional or have been reached by non-logical processes, unless they succeed in satisfying his demand for the most rigorous demonstration. To this end he introduces scepticism as a method. By proceeding in this manner he throws light on the defects of the accepted systems, and in this way renders more acute the sense of evidence and the feeling of responsibility in scientific matters.

By removing everything that can be doubted, he hopes in the end to reach firm ground and to lay hold of some idea which cannot be doubted.

4. He then proposes to analyse the unassailable idea discovered in this manner, hoping in this way to reach a sure understanding of the facts, and a new system. This is the first, and essentially deductive, part of his philosophy.

5. The deductive method is a certain guide only for a limited distance; and in order to obtain a deeper knowledge of the more complex facts of nature Descartes proposes the inductive method. This demands a careful observation of the facts of nature, and a method by which the conditions under which a given phenomenon occurs are systematically brought about and altered. The method must be practised in such a manner that the laws which govern the phenomenon gradually emerge and become clear.

This was the plan of Descartes, and it seems simple and perfectly natural to-day; but at the time it was an achievement of the greatest importance, for the practice of his day reversed, or at best neglected, his postulates. The liberation of thought had to be preceded by a clear understanding of what was wanting, and it is part of the merit of Descartes that he had this understanding. But, besides this, he indicated a method leading to the goal, and gave a brilliant example of the application of the method. His deductive method was not perfect, but he did create an adequate foundation for philosophy. In the sphere of mathematics he was the inventor of analytical geometry, and in that of natural science he contributed many valuable observations and stimulating ideas.

Descartes' description of the mental attitude of his age is so remarkable that I propose to quote certain passages of it, the more so since they are generally treated as part of the description of his own development, whereas, in fact, they are primarily an outline of the scientific spirit of his age, a thorough transformation of which was what Descartes had in mind.

"From my earliest days I applied myself to the sciences. I was told that through them I could obtain a clear and certain understanding of all that is valuable in life; and thus I was filled with the most urgent desire to be acquainted with them. But when I had completed my studies and might have counted myself, as was the custom, a scholar, I was of a different opinion. I was surrounded by error and doubt, and as my appetite for learning grew one thing only seemed to have become certain, namely, that I knew nothing. And yet I visited the most notable universities of Europe, where, if anywhere in the world, there should have been learned men."

Descartes then briefly describes the different studies that are pursued at universities, such as languages, poetry, history, literature, rhetoric, mathematics, ethic, theology, philosophy, medicine, and others. Of philosophy he says that it enables us to speak of all things with the appearance of truth, and to obtain the admiration of the less instructed. Medicine and the rest of the sciences he groups together as aiming at such practical ends as honours and riches. Natural science he does not mention: it was unknown.

He next describes his impression of the several sciences. Most of this we can pass over. The following is his view of philosophy: "Of philosophy I will confine myself to saying that I saw that it had been pursued by the most notable minds of all times, and

that, in spite of this, until this day there was no single point which was not in dispute, and thus shown to be subject to doubt and uncertainty; nor was I so self-assured as to hope that I should reach a better result than the others. Next, reflecting on the number of different views on one and the same matter, each of which has its champions among scholars while only one of them can possibly be true, I came to regard all that was merely probable as little better than false.'

Here Descartes once again groups together the other sciences which he had grouped together with medicine in his first survey. He despatches them with contempt, speaking first of the honours and profit which they may earn, and then continuing thus: "In the end I thought myself sufficiently acquainted with the sciences, even with the most false and foolish, to be secure against deceit whether from the promises of an alchemist, the prophecies of an astrologer, the deceit of a magician, or the tricks and boastings of those people who put on the show of knowing more than they know in fact." A severe, but not an unduly severe, judgment. Here again it is significant that he speaks of Alchemy, Astrology, and Magic, but makes no mention of anything corresponding to natural science proper.

This spirit was repugnant to Descartes. He now proceeded to travel in order to gather worldly experience, hoping in this way to find a means of escaping from the surrounding stagnation. "The conclusions which a man draws in the pursuit of his own business are such that a false argument is punished by failure: and thus it seemed to me that I was likely to find much more truth here than among the subtleties devised by some scholar sitting idle in his study and evolving metaphysical systems and ideas unrelated to practical life which affect him in one way only—namely, in making him vainer in proportion as he leaves behind him truth and sound common sense."

From the experience which he gathered thus he soon deduced an important rule: "I saw that I must not believe in anything the truth of which I had believed only through custom or the example of others."

After some years of travel, he withdrew into seclusion to digest the new facts that he had acquired. One of the chief results which he reached was the following: "With respect to such of my own opinions as I had retained, it seemed to me that I could do no better than to divest myself of them, one and all, to be readopted

only if they withstood careful scrutiny, or else to be replaced by other and more correct views. I was firmly persuaded that by this means I could far sooner discover how best to order my life than if I continued to build on the old foundation, relying only on those principles which in my youth I had allowed myself to accept without ever testing their truth."

Finally, he summed up his results in four main rules which were intended to permit him to arrive at sure and perfectly self-evident judgments. "The first of these was, never to assume the truth of anything unless I recognized quite certainly and clearly that it was really true; in other words, to beware of haste and prejudice, and to admit nothing as a final result unless it appeared so clear and manifest to my understanding that doubt was simply impossible."

"The second rule was, to analyse every difficult question that I should come to investigate into as many simple questions as rendered an easier solution possible."

"The third rule was, always in my pursuit of the truth to order all my ideas in a certain way, beginning with what was simplest and easiest to grasp, and advancing as it were step by step to more difficult and complicated problems, and to introduce a certain logical order into such things as are not of themselves arranged in such an orderly sequence."

"The last rule was, as well in the investigation of the nature of a thing as in the consideration of individual difficulties, to enumerate all points so exhaustively and to set them out so comprehensively, as to be certain that nothing was omitted."

The importance of these rules lies in the fact that they countered the commonest errors which stood in the way of progress.

Descartes now began to travel once more in order to prepare himself for his great work. He says: "I believed that through contact with men I should more easily reach my goal than by continuing in solitude. As soon, therefore, as winter was past, I prepared for travel once more. During the next nine years I contented myself with wandering over the world, and remained an auditor rather than an actor in the comedy that is enacted from day to day. And I was especially careful to note of all things the degree in which they were the occasions of doubt and of faulty judgments; and in this manner I gradually eradicated the errors which had grown up in my mind."

He settled in Holland in the end, and it was there that he

succeeded at last in finding the right method. The first wholly self-evident and incontrovertible proposition which he found was, "I am"; all else may be doubted, but one fact remains unshakably certain, namely, that I, the doubting subject, exist, every doubt serving only to confirm my own existence.

Descartes then proceeds to analyse this proposition, "I think, I am". In doing so he makes use of a number of axioms which he tacitly assumes as self-evident. In this way he reaches a number of important conclusions. Finally, he reaches a point, however, at which a purely deductive analytical method takes him no farther, because the various facts have become too complicated. He now adopts the inductive method. What he says is this: "I wished to proceed to details. But now I was faced by so great a multiplicity of things that I held the human mind to be inadequate to the task of distinguishing the things in the actual peculiar form and nature in which we find them in the world, from the infinite number of those which might exist if God had willed them to exist. Hence it was also impossible to estimate their practical importance for men; unless, indeed, I were to pass back from effects to causes, relying on a number of special empirical facts."

He believed that systematic experiments would lead in the end to the elucidation of even the most complicated systems of facts. "But", he continues, "I saw that these experiments are of such a nature and so numerous that neither my hands nor my means, even if they were to be multiplied a thousandfold, would suffice for them all. But I anticipate that my progress in the understanding of nature will be proportioned to the greater or less opportunity which I may have of making such experiments."

He then considers co-operation with others in the carrying out of his experiments, but finally abandons this plan, since the intellectual training of contemporaries was far too slight to provide him with adequate assistance. Even if others were to communicate to him the results of their experiments, there was the danger that these might be encumbered with far too many irrelevancies and superfluities. He had no confidence in his untrained fellow-investigators, and remarks that the results of their experiments would almost invariably have been misinterpreted, and would even have been rejected, because the experimenters themselves wished to see in them only the confirmation of their views. Thus, while some of the results might be valuable, they would have had to be picked out from among the rest, and the results themselves would not

have been worth such an expenditure of time. Accordingly, he decided to begin by working alone.

Descartes then takes a few examples to show how systematic observation and interpretation will gradually lead to correct results. In this process it becomes plain, however, that he, too, is guilty of false interpretations, and that much seems clear and self-evident to him that, in fact, is far from being so. A good deal, indeed, was shown later to be definitely false. He was also in need of examples and deficient in training, and was too much a child of his time to succeed in avoiding anticipated conclusions and in acquiring a complete sense for the self-evidence of his assertions; and the philosophical deductions which he bases on his main proposition, a proposition correct in itself and, rightly understood, perfectly self-evident, show very plainly to what an extent he was dependent on the scholastic method of studying science, in spite of his clear understanding of the general position.

I now propose to follow these philosophical ideas of Descartes in their main outline. In doing so we shall see how great were the difficulties which so lucid a thinker as Descartes had had to overcome in order to set himself free from tradition as thoroughly as he wished. His writings bear witness to a great internal struggle, the traces of which appear most evidently in the *Treatise on the Method of the Right Employment of Reason*, in which he develops his views by describing his own experiences. In order to increase its stimulating effect he published this work in French, and not in Latin, as was the custom for scientific treatises.

We have seen that Descartes introduced scepticism as a method in order to eliminate from the structure of his concepts and ideas everything that was not absolutely sure and self-evident. By means of this elimination he hoped in the end to reach something that was perfectly certain.

A first certainty of this kind he discovers in the fact of consciousness, which he describes with the words "I think". Even if we doubt everything else, the inner conscious event of doubt, and hence of thought, would remain as an unshakable fact. Accordingly, Descartes considers himself entitled to pronounce the sentence "I think" as perfectly self-evident. This he treats as equivalent to "I am"; and the proposition "I think, I am" is for him the simplest, clearest, and most certain of all propositions. We have

already seen that this was also the fundamental idea of St. Augustine, and in a somewhat more general form we found Parmenides treating an interconnection between thought and being as a fundamental axiom.

On this first safe piece of knowledge Descartes proceeds to build up his deductive and analytical structure, developing it as far as his axiomatic principles and such propositions as he considers self-evident permit him. From the content of thought, the "ideas", he infers the existence of God, and from the existence of God he infers a characteristic of truth, namely, "evidence". With the assistance of this characteristic he infers two further "Substances", Soul (or thought) and Body (or extension). The whole of this system in all its detail closely follows the doctrine of St. Augustine. We need not here follow this in every particular; what is important is the system of axioms on which Descartes bases his analysis, and the non-rational element which he introduces.

Descartes discovered the principle "I think, I am"; but he did not in the least know what to do with it. An analysis of consciousness he did not even attempt. In order to be able to make any progress at all, he was compelled to add some other piece of knowledge, and this he immediately did on the most liberal scale. He begins by adopting a whole mass of mediæval concepts, and he does this without testing or justifying them. In part these concepts are laid down by definition, in part Descartes accepts them as axioms, and in part he allows them to filter into his analysis non-rationally. Thus he obtains a system of axioms which is quite arbitrary and which, without any justification, he places side by side with his capital principle, "I think, I am". The rest of his deduction is in fact a development, partly analytical and partly synthetic, of a somewhat complex non-rational system of concepts.

This is all the more remarkable since he himself had demanded with such emphasis that his elementary concepts must be absolutely axiomatic, and believed himself to have thrown overboard all the accepted beliefs. He does not even appear to have been aware of this relapse into the atmosphere of mediæval beliefs. Without any examination, and with utter guilelessness, he adopts axioms and concepts for the purposes of his exposition, as though there had never been any Descartes who pronounced a warning

against building on the mediæval foundation and against relying on principles inculcated in early youth without testing them; as though there had never been a Descartes who declared that hitherto no certain foundation had ever been discovered in philosophy and that we had a right to accept principles and concepts as the foundation of a philosophical system only after a careful analysis of the facts and a complete examination which must not end until they became perfectly self-evident.

In his *Treatise on the Method of the Right Employment of Reason* and in his *Consideration on the Foundations of Philosophy*, Descartes throughout allowed axiomatic concepts and principles to filter in as though they were self-evident, requiring no particular consideration, still less any justification. He treats them as the elementary common property of mankind, although in a short treatise of a later date he does go so far as to offer a brief conspectus of all the concepts and principles on which his system is in fact based. But he never seems to have been aware of the fact that a fundamental system of axioms requires, if not to be justified, at least to be declared expressly, and that it is not in fact the "I think, I am" that is the foundation of his system, but the above-mentioned group of arbitrarily collected axioms.

This group he himself divides into fundamental principles and fundamental concepts. The members of both classes are of an absolutely axiomatic nature. The latter in particular are anything but simple, and cannot be employed in practice without the help of fundamental principles, which are complex, though treated as axioms.

The most important of his axiomatic fundamental concepts is that of Substance, next to which comes that of Cause, that of "objective Reality" (that is, Reality which is merely imagined), those of "formal" and "eminent" Existence, of God, and others besides.

The most dangerous of these was the concept of Substance. In different places Descartes gave quite different definitions of it. In certain passages he says that Substance is that which has within itself the ground of its own existence, causal independence being here the chief characteristic. But to this he adds the assumption of different stages of Substantiality, since in this world we never are acquainted with any perfect independence.

Other passages appear far more intelligible in which he says that we really know nothing of Substantiality save that it is

something to which we refer our imaginations, it being self-evident that there must be some such entity, since the Nothing evidently cannot be the subject to which properties are referred.

Such an argument in fact assumes three axioms: (1) Every determination (*proprietas, qualitas sive attributum*) which we think must have a cause. (2) The cause must contain the determination *formaliter* or *eminenter*. (3) The cause cannot be nothing. Since this cause cannot be nothing, it must be something, a "thing" or a "subject" in which the determination immediately and actually inheres. This subject he calls Substance. This argument is brought out very clearly in the "definition" of Substance given in the "*rationes probantes*".

Clearly Descartes' concept of Substance is not an independent prime concept. It depends on a number of axioms, and more particularly is closely connected with the concept of causality. The same is true of the other fundamental concepts. But it does not appear that Descartes was ever fully aware of this dependence, for, if he had been, he would have been compelled to give a very different description in the "*rationes*". His ideal in the "*rationes*" is to give a strictly logical exposition of his system "after the manner of geometry". But his concepts depend on certain axioms, and therefore he had no right to make them prior to these axioms. In fact, however, he treats the analysis of the concept of Substance (for example) as a "definition" of this very concept, and places it before those very axioms from which he actually attempts to derive it in the definition.

The following are the chief of the axiomatic principles which he expressly sets up as such:—

1. Whatever is has a cause why it should be.
2. The past is not the cause of the present.
3. The "Nothing" cannot be the cause of something that actually is.
4. The whole of the "reality" or perfection of a thing (*res*) must be contained *formaliter* or *eminenter* in the cause. The "objective Reality" of an image Descartes classes as a reality, and by this objective Reality he means the imagined Being, in its fulness, of an imagined object. Thence he reaches the next axiom.
5. To the "objective Reality" of the image there corresponds a cause in which this same imagined reality is contained. It is contained, not as objective (or imagined) reality, but *formaliter* or *eminenter*.

6. Substance has more reality than accident.

Descartes enumerates four other and still more subtle axioms which are omitted here.

Such are the axiomatic and non-rational principles and the fundamental concepts as set out by Descartes himself; the whole of his system is built up by their help. Relying on the fundamental and absolutely certain fact which we call thought, he advances by means both of analysis and synthesis. Great, however, as is his skill in the use of this method, we can see how deeply he was still involved in the barren ideas of the Middle Ages when he imagined that he had cast them off. It is obvious that he could not achieve his aim with an apparatus of this kind.

The proof of the existence of God is the foundation on which the whole of the system is built up. The method used by Descartes begins by imagining God as the most perfect substance. Such an image exists within us, and Descartes treats the fact of its existence, once discovered, as a fact of consciousness. He then applies one of his axiomatic propositions and finds that the image must have a cause. Now another axiomatic proposition states that the objective reality of an image cannot be greater than the formal reality of its cause. As men we are finite and limited, and therefore cannot ourselves be the cause of the image. Hence the cause of the image must lie in some external Being, and this Being must agree with our idea of God. The reality of God is part of this idea.

From the reality and perfection of God and from our dependence on Him, he infers "that everything is true of which I have full and clear understanding". But he does not give us any standard that will allow us to tell when something is so fully and clearly understood that we have a right to consider it true, and we have seen already that much seemed clear and obvious to him that we look at now in a very different light.

Next the definition of truth is applied to the alleged clear idea which we have of our own ego. He thence infers the nature of this ego. This procedure is so important that I propose to devote some more time to the question of his first and most certain proposition "I think, I am", asking to what extent this proposition, and our idea of the ego, really is clear.

Descartes is wrong in thinking that the "I am" is simple. The

proposition contains the idea of the ego, and the ego is a complicated idea which requires analysis. Further, it contains the idea of being, which also requires elucidation.

In practice, of course, it is impossible to doubt the "I am". For man it has an immediate relation to reality. But it is also the supreme principle of our theoretical cognition, and as such it further requires that all the facts which are revealed in it are fully elucidated, as must also be the meaning in which the words are used.

The "ego" is an abstraction from a definite actuality, having a certain nature, which we discover as a datum. In a first abstraction we call it sensation, hearing, sight, imagination, doubt, and the like; in a still more abstract form Descartes calls it thought, by which he means all states of consciousness as such. The fact of this thought he expresses in the proposition "I think", where "I" is simply the grammatical subject necessary for the formation of a sentence. But once he has expressed it, he immediately takes it as meaning something more. This is due to the fact that the multiplicity of states of thought forms one consciousness, and it is on this unity that the "I" ultimately rests. It is, in a manner, the common point of reference and the apparent point of departure of all processes of thought.

Of all these facts Descartes is only dimly aware. Hence he is induced to place the "I" thus transformed in the foreground, and to add to it the "am". In the first instance the "am" is no more than an affirmation, a judgment about the actuality and the truth of the "I"; but with it something else creeps in, namely, the idea of an independent something, or substance of thought. Descartes tacitly takes this idea of substance for granted when he asks, "What is this I?" and he has no difficulty in answering that it is a thinking entity—that is, Spirit. This argument leads him down a blind alley, and a logical confusion arises which he is unable to disentangle.

But Descartes was never aware of this confusion, because he had not the eyes to see it. The concept of substance had been drilled into him, too, at the schools as though it were a kind of logical necessity. To this must be added that grammatical usage and the habit of everyday life make the words "I", "am", and "something" so familiar that the idea of their further analysis comes easily to be dismissed.

One element of this confusion must be examined here, because

it controls the further course of the argument. The "unity" of the states of consciousness is a fact of our consciousness; it is, in a manner, a pole to which all our conscious states are referred, and our awareness of the ego is closely connected with it. A more thorough analysis, however, shows that this relation is a double relation, and that there is an inner pole corresponding to the outer pole. This double relation attaches to all the data of consciousness, and is the most universal and important predication which we can make about consciousness.

This twofold relation must not be taken as though it were equivalent to two relations which could be imagined as subsisting apart from each other; the relations are two inseparable sides of the same One, and each is the condition of the other. In the first part of this work we developed them in detail. Each fact of consciousness is "subject-object". This is the starting-point of a far-reaching and fruitful analysis.

Descartes is well aware of this double relation; but the nature of his advance, which omits certain links in the chain of progress, is such that it appears to him in a fragmentary manner. Thus the curious concept which he calls the "objective reality" of our imaginations rests on a distortion of the reference of the concrete determinations of our imaginations to an outer pole; a reference of determinations to the "non-ego" which in turn stands in a relation of opposition to the reference to the "ego" which is present in these same imaginations.

Of all these relations Descartes was unable to obtain a clear view. He arrives at an intuitive and non-rational idea (*lumen naturale*) which he took to be absolutely self-evident, and by means of this he transforms the twofold opposite relation into a dualism of two substances of an opposite nature. Ultimately this dualism was a variant of the prime form; but the form in which the two opposite members are rigidly opposed as distinct substances is a very inadequate expression for it; and it was incapable of further development. The two opposite members in themselves are, besides, such complex logical structures that they were unsuitable means for the expression of the prime form.

It did not escape Descartes that these two substances which are supposed to exclude each other are in fact in a very close reciprocal relation. This apparently contradictory twofold relation could have been represented very easily from the point of view of the pure prime form; from that of the concrete Cartesian variant, this is not

so easily done. The very first problem was to find a higher unity in which to unite the opposites. Descartes could see one solution only of this difficulty: the will and omnipotence of God alone could bridge such a gap. Such a view, however, implies a renunciation of any further understanding.

But even this dearly purchased intellectual bridging of the gap would not suffice to overcome the difficulty. God was supposed to be a Substance, a Substance different from body and spirit. Here the logical gap is deeper than ever: it is the extremest development of the concept of Substance. Descartes saw the gap, but he did not know how to bridge it. This was the starting-point of numerous attempts at a solution made by other thinkers; but the different attempts served only to show that the error must lie at a more primitive stage, and much time had to elapse before the right method of approach was found. The names of Geulinx, Malebranche, Spinoza, Leibniz, and Berkeley mark the different stages of preliminary search: the new method proper begins with Locke.

Of the systems which are allied to that of Descartes we will examine in detail that of Leibniz. His ideas are very noteworthy; but before proceeding to him we may mention a thinker contemporary with Descartes who attempted to guide science in a new channel and set up postulates similar in many ways to those of Descartes. This man was Francis Bacon. He reverted to the ideas which his great predecessor Roger Bacon had pursued so tenaciously three and a half centuries earlier. In many respects he went farther than his forerunner: but in certain important points he fell short of him.

Before the time of Descartes, Bacon had clearly stated that the whole of our knowledge must be based on experience, and that there can be no progress in science or in general civilization until a strict foundation is given to the scientific investigation of nature; and he fully understood the difficulties that had to be removed before the right road could be reached. Thinkers had become lost in logical speculation and moved in a region of barren concepts and prejudices; while, on the other hand, the sense for the observation of nature and for the practical application of the results of observation had been altogether suppressed. It was necessary to cast off all this mass of "idols" and to proceed to an unprejudiced investigation of nature. Methodical observation, orderly description of the

results of observation, and the extraction of common characteristics and of the ruling laws would soon lead to certain knowledge.

In the mind of Bacon knowledge was immediately associated with power. His thought was essentially devoted to economics and applied science: knowledge is power, and in the first instance science was valuable only in so far as it enabled man to conquer nature and to employ new appliances in the service of the whole of mankind. *Invention* was to be the indirect if not the direct aim of scientific labours, and the *Novum Organon* may be called a manual of invention.

In order fully to appreciate this we must remember how strange such ideas were to the trend of thought of that period. Innovations met with sheer hostility. However, in England the words of the second Bacon fell on fruitful soil, and after his time a law of patents was introduced in England which was the first of its kind in the world and still remains on the Statute Book.

Unlike the first Bacon, Francis Bacon was by nature one-sided. He was no friend of deductive thought, and he had no liking even for mathematics, although mathematics is the most valuable instrument of both natural and applied science. But the time was ripe, and the influence exerted by him was enormous.

Indirectly at least philosophy is indebted to Bacon. It was precisely by means of the one-sided turn of his intellect that he did so much to overcome the mediæval idea of Substance, although more than a century had to pass before the right road had been discovered. Meanwhile all the other possible approaches had to be tested.

A particularly important step of this kind was taken by Spinoza. He, too, is attached to the concept of Substance, but he defines it as that which can be understood *by itself*, and is logically independent. This idea does not differ greatly from that which had been discussed by Descartes; but what Descartes had in mind was causal independence, while Spinoza had logical independence in mind. As an axiom this is far more definite, and it is nearly identical with the quality which we took as the chief characteristic of the concept of Substance in our analytical order.

To his definition of Substance Spinoza adds a further characteristic, namely that Substance is "in itself". But he gives no further explanation of this, and in the first instance does not seem to have intended more than logical completeness and independence,

properties which he particularly emphasizes in a number of different locutions. At the same time the expression *to be in itself* prepares the way for a connection between the concept of Substance with that of causal independence.

Causal independence, the *causa sui*, he describes as a concept which contains existence, thus introducing an idea of being which bears a strong resemblance to the mediæval concept on which the ontological proof of the existence of God was based. But Spinoza gives no definition either of this concept of being or of that of causality; and he adopts other fundamental concepts of an axiomatic nature into his system of axioms without offering any further description of them, like that of the idea, of the object of the idea, and the distinction between the two, and of eternal and of infinite Being.

Like Descartes, Spinoza places at the head of his work a system of axiomatic concepts and propositions in order to deduce the body of his doctrine from them by a method of rigorous demonstration. His system of axioms is perhaps somewhat more complete than that which Descartes set up, but, like his, it is mediæval in its tendency and full of unexplained concepts. But a just instinct guides the process of Spinoza's deductions, so that out of this confused mass of concepts he succeeds in deriving certain main characteristics which raise his philosophy above that of Descartes.

Unless we are willing to assume different degrees of substantiality, only the Whole as such can be termed Substance in Spinoza's sense, for all the parts of the Whole are in a relation of interdependence, and cannot therefore be apprehended logically if taken separately; hence they are not Substance for Spinoza. Consequently he denies the substantiality of thought and extension (Soul and Body).

According to Spinoza, thought and extension are two different manifestations or aspects of one and the same fundamental Substance—namely, God. Looked at from the one side everything simultaneously is thought, and, from the other side, body. Thus the uncompromising substantial cleavage has been removed: thought and extension, soul and body, are now two entities each of which is the condition of the other; and they are both completely absorbed in one Whole, while at the same time they are completely contrary.

Thus this partial adjustment of the Cartesian argument clearly allows the fundamental idea to appear in a more intelligible formulation. But the mere elimination of the concept of substance from

the world of the finite, and the restriction of its applicability to the Whole (or God) did not suffice for a satisfactory solution of all questions. One capital difficulty consisted in the far too concrete manner in which the two opposite sides were taken. The opposition between thought and extension is not fundamental or absolute, it is not immediate, nor based on any inner necessity, nor is it simple. Neither thought nor extension can be taken as being ultimate or atomic in its nature, and consequently the prime idea in this narrow formulation is capable of no more than a very modest development.

Further, the solution offered by Spinoza, which consisted in the elimination of the concept of Substance from the world of experience, overlooked that this concept has a certain relevance in this world, and that this fact demands an explanation. Descartes had taken the concept of Substance without examination from the old school and had applied it as suited him best and quite capriciously: Spinoza transplanted it without any explanation to a point where it lay beyond the scope of our experience. At bottom this was a mere game of hide and seek which necessarily ceased to please as soon as the first joy at the new light obtained by the process of elimination had died down. Once more a great gap became visible: and the doctrine of Spinoza did not contain the means of bridging it.

This gap Leibniz tried to avoid by a new formulation of the fundamental idea. He assumed the existence of separate substances, all of which were supposed to be indirectly interconnected. The connection was found in the hypothesis that they all alike radiated from a prime Substance, and that in such a manner that they appear as so many separate repetitions of it. The particular form in which each of the Substances exists is derived from the phenomenon which we call imagination or, more generally, consciousness. Extension, on the other hand, according to Leibniz is not Substance, nor is it a form attaching to Substance.

Here, again, the difficulty lay in the inadequate elucidation of the concept of Substance. Leibniz gives no clear definition of this concept; but to the individual Substances he gives the name of *entelechy* (in the sense in which Aristotle used the term) because up to a certain degree they bear the reason of all their states within themselves. But the peculiar nature of their relation to the primary substance and to each other is clear evidence that Leibniz did not think of Substance as an independent "something" standing behind everything, and that he did have in mind a prime form of relation

of the kind that had been outlined by his master, Nicolas of Cusa. The importance of his theory, the inner force, and the capacity for further development are due to this fact. The form itself we met with in the course of the theoretical exposition of the natural order; and at the stage of the individual forms we found the same facts as were later discovered by Leibniz. Fichte, to his own surprise, reached very similar results after he had succeeded in completing a considerable advance along the lines of the prime form.

In order that we shall be able to form a better estimate of the progress in the direction of the prime form that was set in motion by the doctrine of Leibniz, I propose to deal with the latter in some detail.

7. The Monadology of Leibniz

Parts of the Natural Order discovered by Leibniz. Individual Substance. Unity. Theory of Mirroring—Solipsistic Isolation—Multiplicity of Substances—Projections of the Prime Form.
 Leibniz's own Version—General Description of the Monad—Interrelation of Monads—Relation to the Prime Form.
 Appreciation of the Work of Leibniz.
 Leibniz's Relativism.
 Berkeley.

The standpoint occupied by Leibniz in his contemplation of the world corresponds very closely, within the scheme of the fundamental order, to the stage of the simple Individual Form without gradations. The view of the world which is obtained at this stage is described by Leibniz with great fidelity.

Our most important acquisition at that stage had been the concept of an individual substance. This was not treated as a simple concept: it was a peculiar and somewhat complex form of relation, the germ of which had been discovered at earlier stages of the survey.

In the simple individual without gradations we found a unity in opposition to the multiplicity of the points of reference which are posited through the fact of multiple determination. The individual is a One in a twofold sense—in an elementary and in a comprehensive sense. In the elementary (or Ordinal) sense the individual is one One among others; it is a point of reference like all the others which are implied in the fact of multiple determination, and it implies the fundamental unity of the Many. In the comprehensive

sense, on the other hand, it is a synthetic One: it is itself the Whole which comprehends all the rest within itself.

This unity, then, has two meanings, and it is on this that the peculiar form of relation rests, which enables us to speak of an individual substance and an Individual. Using metaphorical language, we were able to say that the individual as one among many mirrors in itself the Whole by virtue of the supra-individual prime form and of the fundamental multiple determination which is implied in it. We further saw that this mirroring is the fundamental form of individual existence in general, and that at the same time it is the fundamental form by virtue of which we can speak of imagination and consciousness in the most general sense.

Now the individual substance, taken as Unity in this twofold sense, is exactly identical with Leibniz's Monad.

It will be remembered that we made some further discoveries with regard to the individual substance. We found that each substance in the first instance appears as an isolated solipsistic entity. We ourselves are individuals, and we are all that we are solely by virtue of our relation of interdependence with the Whole. Once we had recognized that the individual form is of a dependent nature and can be resolved in a higher individual, we were able to proceed to a kind of transcendence. This transcendence accompanied the realization of the fact that all points of reference of the multiple interrelations of the Whole are of equal value as means of manifesting the prime form. This led us to the conclusion that every other point of reference can be taken as an individual substance in exactly the same manner as the point which we call our ego, since the same formal conditions for the application of the concept of substance exist for every point in exactly the same manner as for our ego. This consideration leads us to a multiplicity of individuals and, finally, to the category of the "world-forms".

Each of these individuals is in one respect a solipsistic unit, since each in a sense is the whole. From another point of view, however, all are held together by strict and definite relations, since they all are radiations (or "projections") of one and the same prime form having one and the same prime determination. Consequently, they stand in a relation of "harmony" to each other, which rests on their supra-individual foundation and has its prototype in the prime form.

The individuals are not, however, identical. They have different individual standpoints and, in consequence, a different relation to

the Whole. Now this is exactly the description of these facts which is given by Leibniz. But, although his description is extremely accurate, he is not acquainted with the foundation on which it rests. In our own survey we had advanced so far as to be able to lay bare the interconnection of the facts by means of an analytical process: Leibniz discovers the same facts, but his method is largely intuitive, and it is probable that the original stimulus came from Nicolas of Cusa, either directly or indirectly through the works of Giordano Bruno. The final result is exactly the same as that which we reached, and the whole of the *Monadology* could be taken up into our system almost without change and treated as the description of a subsidiary region of the survey.

I now propose to give an outline of the system of Leibniz, and in doing so to adopt his own words.

The Monads are simple substances. They are the ultimate indivisible elements or atoms of nature, and in their totality they constitute the universe. But the unity of each Monad contains a multiplicity, and this multiplicity corresponds to the totality of the Monads of the universe, of which it is, so to speak, a copy. This interrelation between the unity of the Monad and its own inner multiplicity is the same relation formally as that which is generally called imagination.

Imagination can be referred outwards—that is, to the universe. But, on the other hand, each Monad is a Whole which is complete in itself: it has no windows through which anything can pass in either direction. At the same time the Monad contains a variable manifold: the “principle” of this manifold and of its changes accordingly appears as an internal principle. Although the Monads are complete in themselves and neither act on the external world nor are the objects of action from it, they nevertheless stand in relation to one another, for the sum of the Monads forms a Whole, and each one of them is a living mirror of this Whole, which is the universe. The Monad is a microcosm, and there are, in a sense, as many different universes as there are Monads.

But all these individual universes are no more than different views of the one Universe, and they differ only in so much as the standpoints of the different Monads differ within the universe. This is due to the fact that all the Monads are simply “derived” from a supra-individual prime form which is the unity and source of every determination. Leibniz calls it the prime substance, God, or (an expression due to Synesius) *monas monadum*. The Monads

may be called radiations of this prime substance, and their common interconnection causes them to be in complete harmony to one another from the beginning, without any one of them being forced to pass beyond itself. Each is in a manner the individualized image of the original Monad.

It is surprising to note the certainty with which Leibniz outlined all these relations, although he was not acquainted with those underlying facts which of necessity would lead him to this and no other system of relations.

It is probable that Leibniz was directly or indirectly under the influence of Nicolas of Cusa, who, two hundred and fifty years before Leibniz, had demonstrated, from a somewhat higher standpoint, the facts from which the doctrine of Leibniz may be derived. It is true that his ideas, however profound, are so heavily burdened with mystical notions that it was difficult to reach their valid kernel. In any case, we cannot but admire the accuracy with which Leibniz carries through the whole of the exposition from the difficult standpoint which he had selected. Although he did not know them, he carefully followed the outlines of the natural order: and his keen sense for these outlines allowed him at least to suspect that interconnection between philosophies which I called relativism.

In the first book of the *Nouveaux Essais* he writes of his theory: "It seems as though this system united Plato with Democritus, Aristotle with Descartes, the Schoolmen with the Moderns, and theology and ethics with the knowledge given by reason." He then proceeds to enumerate a number of difficult details from the teaching of earlier philosophers, all of which are resolved in his system. More aptly still he says in a letter to Basnage: "An examination of this system will show that, rightly considered, most of the philosophical schools contain a greater element of truth than was first expected. Each school has its own peculiarity. The sceptics allow but a small degree of substantial actuality to perceptibilia, the Pythagoreans and the Platonists trace everything back to harmonies or numbers, to ideas and imaginations; with Parmenides and Plotinus the One is identified with the Whole, and no trace of Spinozism enters into their philosophies; the Stoics emphasize the element of mutual interdependence, which is not incompatible with the self-determination of other systems; the Cabbalists and Hermetics treat consciousness as the guiding principle, and Aristotle and the Schoolmen insist on the Forms and the Entelechies, while Democritus and the moderns explain all individual events

mechanistically. Now all these peculiarities are placed in a single perspective in my system, in which objects, which from every other point appear confused, are seen to be subject to law and are allowed to display the symmetry of their parts. The rejection of rival philosophies was due to a spirit of sectarianism, which barred the progress of the critics themselves."

Undoubtedly Leibniz was right in making these assertions. But, wide and comprehensive as is his survey, it naturally expands in proportion as the standpoint from which the facts are considered is more universal, and in this respect Leibniz did not go as far as Nicolas of Cusa, his forerunner.

Bishop Berkeley developed a theory which agreed with that of Leibniz in almost every detail, although it does not appear that he himself was aware of this close similarity. He assumes a multiplicity of spiritual units which are severed from one another by reason of their solipsistic nature; these he treats as simple substances: they correspond to Leibniz's Monads. They do not act on one another, and the imaginations which they possess and in which the world is reflected are derived through their dependence on God. The differences between Berkeley and Leibniz need not be further discussed; they are insignificant compared with the similarity of the fundamental idea.

8. The Change of Spirit and the Turn towards Epistemological Criticism

The Problem—Driving Forces—The Period of Transition and What it Effected—Results.

The Turn—Preparatory Stages—Protagoras—Atomists—Plato—Epicurus—The Sceptics—St. Augustine—St. Thomas Aquinas.

First Definite Formulation: Descartes.

Locke: His Fundamental Principle—His Concept of Substance.

Hume: Appreciation of the Results reached by him.

Kant, Fichte, Hegel.

We have seen that numerous attempts had been made to master the difficulties arising from the concept of Substance. In fact, there was one means only of escaping from the confusion; it was necessary to inquire after the alleged logical compulsion which leads to the concept of Substance, and to test the facts of our inner and outer

experience on which it is based. Before all it was necessary to ask what property it was in the structure of our intellectual faculty which led us to this concept, what is its connection with the "objects" of thought, and what element in our concepts must be treated as being no more than the form in which this faculty operates. The approach to this inquiry had been smoothed by the surprising turn which Leibniz and Berkeley had given to the concept of Substance: and in fact it was in their period that the means of reaching it was discovered.

It is necessary, however, to turn back to the wider problem which human understanding was attacking at that time, and to examine the other steps that had been taken towards a solution of the problem, if we wish to obtain a correct appreciation of the origins from which the new systems drew their inspiration.

This wider problem was set out above, and its description was incidental to the description of Descartes' system. It had been discovered that the mental attitude of the Middle Ages stood in the way of progress, and the problem was to overcome this obstacle. Descartes had rightly seen that the essence of this attitude consisted in a deficient sense for the evidence on which assertions are based. From this lack there resulted a distaste for accurate observation: thinkers were untrained in the interpretation and arrangement of observed facts. Accordingly, the problem was how to develop a sense for evidence and a feeling of responsibility in making scientific statements, to stimulate and train a sense of observation and interpretation of observed facts, and to co-ordinate the labours of many in penetrating deeper into the problem of the universe.

We know how great a part was played in the awakening of the mind in this sense by Columbus' voyage of discovery, and by the intellectual daring of Copernicus. I need not here recall how greatly the renaissance of humanistic studies and the Reformation contributed in smoothing a way for the consideration that a different view of the whole universe might be possible. It was a fortunate coincidence that in those great times the art of printing was discovered, by which a rapid and complete interchange of ideas was rendered possible. Everywhere the new spirit began to gain power: but the right road was indicated only by the persuasive teaching of Bacon and of Descartes. The works of these two philosophers attracted universal attention and acted as a general stimulus to thought.

It is true that Germany was at that time suffering the ravages

of the Thirty Years' War, whence its development was retarded by many years. A man of the calibre of Kepler could keep himself above water only by means of astrological humbug and the publication of almanacs. But the condition of other States was better. In the British Isles, protected as they were by their geographical position, it was easier to devote earnest consideration to the discovery of the right method. The practical minds of the English were turned towards the study of political economy, and at the suggestion of Bacon a law for the protection of inventors was passed during his own lifetime. Inventors were looked upon as the teachers of the people, and under the protection of this law English industries soon reached a highly flourishing state. The turn towards epistemological criticism was destined to arise in England. To this we shall soon revert.

We have already seen how Descartes, and after him Leibniz and Spinoza, struggled to master the abstract concepts. In mathematics, on the other hand, and in the study of natural science, great advances were made. Descartes introduced analytical geometry, and Leibniz and Newton the differential and the integral calculus. For the understanding of the inner facts of nature these were instruments of an unsuspected scope and power.

This was the age in which the telescope was discovered, which admits us to the greater universe, and the microscope, which reveals a new microcosm. In every region new discoveries were made. Definite laws were found to exist where things had formerly been treated of necessity in general phrases, and where mere imaginations had been taken for facts because it had never been discovered that a more rigorous mode of apprehension was possible. Galileo introduced new knowledge about the structure of the universe, the laws of gravitation, and the movement of the pendulum; and Huyghens about the phenomena of vibration and the living forces. Newton defined the concepts of force, mass, and gravitation, formulated the theory of the quality of action and reaction, and derived with strict scientific accuracy the laws of central motion, whence followed the laws governing the movements of the celestial bodies. At that period atmospheric pressure was discovered together with the fundamental laws of sound and light and with many important facts in the theory of electricity and magnetism. Science, and hand in hand with it mathematics, advanced with giant strides; and investigators learned how to apply their methods immediately to the study of the problems of natural science.

It was only now that the power of the human intellect was correctly appreciated, together with the sources from which it draws this power. Thinkers acquired the practice of observation, classification, distinction—and thought; they learned how to restrain their fancy, and to separate the proved from the unproved. Scientific investigation was beginning, and this in turn reacted on the study of those facts which cannot be discovered immediately by the senses or by observation. It led to a gradual but progressive examination of the more general concepts, by means of which these were transformed and rendered more accurate.

On the other hand, the results of the study of nature led to certain new difficulties. Thus this study introduced a definite distinction between sense-determinations and spatial events: between the sensation of sound and the waves of sound in the air, the sensation of warmth and material waves of another nature, the sensation of light and the waves in the ether, and so forth. All this contributed to the distinction between the subjective perception and the “in itself”, the “reality”, and the “appearance”—in short, to the idea of something standing “behind” appearances, or in other words, to the concept of a *substance*.

At the same time the possible sources of errors became known, and it became proportionally easier to guard against them. Caution grew, and with it the demands which were made with regard to the evidence on which assertions were based. The results attained in this manner were valuable, not only for the development of scientific thought, but of thought in general.

Thus more and more numerous indications were obtained which served to define the more general concepts and to render intelligible the facts of our own existence and growth, and a broad light began to spread where investigators had before advanced with hesitating steps through darkness. Sooner or later all this was certain to lead to a thorough revision of the meaning and limits of our cognitive faculties.

The turn towards the epistemological criticism began in England, and is chiefly connected with the names of Locke and Hume. The movement was led to its conclusion by Kant; but the greatest of the new discoveries were not reached without preliminary labour.

The essence of the idea which lies at the bottom of this movement consists in the desire to discover the part played by the structure of our own intellect in the formation of our perceptions,

concepts, and judgments. Closely related to this is the question of the significance of the objects of thought apart from thought.

The rudiments of this question are found in the saying of the philosopher who stated that there is a fundamental distinction between our ideas and notions about the world, and the world in itself. This implies the realization of the dependence of the object of thought on the subject; the Eleatic world of "appearance" was a special form in which this realization was expressed. Another formulation is that given by Protagoras, when he treats man as the measure of all things. Little is known of his works or about the man, and what we possess is not easy to interpret. It would appear, however, that his intention was to treat only the immediate datum of our individual consciousness as the foundation of cognition, to deny that we have access to any save forms of relation, and to deny further that there is any "in itself" of things, or any transcendent process by which thoughts are turned into independent things. Thus his other utterances, which are full of a spirit of relativism, obtain a deeper significance.

The Atomists attempted to explain the sensuous properties, the colours, sounds, etc., by means of spatial-temporal events, which implied that all these sensuously perceptible properties—which *in themselves* are not identical with given forms and movements—are dependent on some subjective element.

Plato was equally aware of the subjective nature of sense-perceptions, and in the *Theætetus* he uses language which seems to indicate that an investigation of the nature of cognition must be the foundation on which correct knowledge can alone be based.

Of the ancients it would seem that Epicurus came nearest to the notion of epistemological criticism: unfortunately only small fragments have survived of his *Canons*, so that it is difficult to do full justice to his arguments. He follows the notions of the Atomists, and holds that sense-perceptible properties reach us through material emanations of the objects. In this manner sensations arise. The relation in which the things, their emanations, and the act of perception stand to one another does not clearly appear from the fragments which have come down to us; but Epicurus does clearly explain that there is a subjective element in our sensations and imaginations and that they merely resemble things and are not identical with them.

The sensations he treats as the simplest and most immediate perceptions, and he makes an express distinction between them

and such imaginations, concepts, and opinions as we form by processes of subsumption, comparison, and the like. Concepts arise through the recollection of similar perceptions frequently repeated. By means of continued observation we recognize laws which permit us to infer the future course of events with a greater or less degree of probability (Induction).

The immediate data of our sense-perception as such are treated by Epicurus as having full reality, and even a dream or the phantasies of lunacy possess, as such, immediate reality, whatever may be the significance of such percepts apart from the percipient subject. The systems of relations, on the other hand, which we construct in our minds in order to explain the facts of the outer world, are not necessarily applicable to reality. These are "opinions", and they have a practical justification only in so far as they fit without contradiction into the complete structure of our perceptions.

It is this harmonious compatibility with the whole of the structure which with Epicurus is the sole criterion of the truth of our opinions. The correct attitude towards them is one of the greatest possible caution and indifference. At bottom they are only fictions, and their practical usefulness is the measure of their validity. A special warning is uttered by Epicurus against metaphysical figments and hasty hypotheses.

There are two main assumptions which seem to Epicurus to be consistently applicable without contradiction, and consequently true, namely, first, that the sense-properties of things, like colours, sounds, and so forth, are merely relative; and, secondly, that outside ourselves there exists nothing save atoms, whose chief properties are extension, form, order, and motion. There are strong indications that he came near to the critical turn of philosophical thought, among which are his appeal to experience as the sole source of knowledge, his views on the formation of concepts, the critical distinction between the facts of consciousness as such and the contents of our imaginations, the emphasis he lays on the subjectivity of our sense-perceptions, and, finally, his critical attitude to mere "opinion".

The demonstration used by the Sceptics is also based on a tolerably clear understanding of these facts.

We have already seen that St. Augustine held a somewhat similar position, at least in so far as he effects an absolute distinction between perception as such and the object of perception. Perception as such is immediately certain. External objects lie

altogether beyond us, and their reality is vouched for only indirectly through the reality of God. Unfortunately, by this latter argument St. Augustine, like Descartes at a later period, debarred himself from a deeper understanding of the facts.

St. Thomas Aquinas makes use of a number of different expressions to formulate his guiding principle: "Cognition is dependent on the peculiarities of our cognitive faculty"; or, again: "All that enters into us assumes our own peculiarity." He was completely dominated by dogmatism and formalism; but in spite of this he did point out the importance of experience; he clearly apprehended the part played by the cognitive faculty in the formation of a picture of the world; he made the attempt to discover the structure of this faculty, and he rejected the innate ideas.

But it was Descartes who was the first to state expressly the fundamental idea of Criticism. This he did in his *Rules for the Guidance of the Mind*, a work first produced in the twenties of the XVIIth Century, but not published until long after his death in 1701, when Locke's *Essay on the Human Understanding* had already appeared. On the other hand, Descartes' work could be consulted at Paris before its publication, and Leibniz is believed to have made a copy of it there.

In the eighth Rule Descartes explains that it is necessary first to have tested how far the cognitive faculty will carry us before other questions are approached, since the whole of our knowledge depends on the efficiency of our intelligence. If we neglect this preliminary investigation we shall remain ignorant of the scope of our intelligence, and all subsequent efforts will be in vain.

This investigation of the knowledge which lies within the scope of human reason is compared by Descartes with the procedure of a craftsman who first prepares his tools before he sets out to produce an object of his craft. "There can be no more useful object of our study than the nature and scope of human understanding. . . . Whoever has the least love of truth must have made this investigation once at least in his life, for the study of this question contains the true instrument of knowledge and the whole of the Method." And he further points out that it is absurd to enter into discussions about astrology, alchemy, and the like unless the question has first been answered whether this study lies within the scope of human reason.

But, he proceeds, there must be some solution to the problem of discovering the limits of our cognitive faculty, and, in any case, it

can be no more difficult than any other question that we attempt to elucidate. Accordingly he proposes to begin with a theory of cognition and then to proceed to a theory of the objects of cognition.

All this is stated by him so clearly and in such detail that it is Descartes and not Locke who must be regarded as the first thinker to formulate the problem of the theory of epistemology. On the other hand, it is strange that Descartes does not explicitly make use of this profoundly novel formulation of the problem in his three chief works, which were written in the thirties and forties of the XVIIth Century—the *Treatise on Method*, the *Considerations*, and the *Principles*. In these works he relapses into the old errors.

In the Rules, much like Kant, he set out two sources of knowledge: pure understanding, and the senses. Besides these he mentions the faculty of imagination, and, in another passage, that of recollection, as holding a kind of intermediate position.

Locke was a contemporary of Leibniz. His theory holds that there are certain questions which are the favourite objects of speculation. But, so he proceeds, the problem was attacked in the wrong way when men, without previously examining the powers of our understanding, ventured into a sea of questions about the nature of existence without having a single certain point from which to begin. Such a method must lead to empty phantasies or to complete scepticism, and not to any fruitful work.

Accordingly Locke sets himself the task of discovering the limits of the power of human understanding, examining more especially the manner in which we reach images and concepts (or Ideas, as he calls them), and how we effect a distinction between these and their objects. He begins by showing that there are no innate ideas, and that all the images and concepts which we are capable of forming depend solely on external or internal experience. Concepts are formed through the co-operation of the senses (which are receptive) and the understanding (which is active). The cognitive faculty of our senses is adapted to the requirements of life, and, in different circumstances, shows us different properties of things. If our eyes had the power of microscopes we would not only see different forms in things, but even, in certain circumstances, colours different from those which we see with the naked eye. But, on the other hand, we would not be able to see into the distance and

would be unable to find our way to market. A part of reality must always be hidden from our senses.

Now the concept of Substance is one among the fundamental concepts which we possess. It has a strong hold on our thought and tempts us to assume that behind all the assumed properties there is another special, perceptible entity. But at the same time the concept of substance is not an innate idea or an inner necessity of thought; it is derived from experience like the rest.

In the notions which we derive from experience our understanding finds certain recurrent relations, and devises certain general forms within which it arranges the facts. Thus, for example, the repeated observation of similar complexes of events leads us not to look at these complexes as the result of chance, but to assume a substratum for them which holds them together. This purely fictitious something we call substance. With Locke this is equivalent to something about which nothing is known, for there is no means by which this something can be apprehended and cognized in its reality. All that we can apprehend are percepts and the forms in which they are related to one another.

It must be admitted that Locke hesitates to assert that substance is a fiction and no more. In fact, he does not delve very deep into the facts and does not show how we reach the concept of objects; nor does he go very far in his search of some entity which, after all, might be found to correspond to the concept of substance. His attitude to the question of substance has a certain similarity to the attitude taken up by Kant to the question of the *thing in itself*.

In the course of his investigations about the forms of relation (which he simply calls relations) Locke came very near to understanding that the whole of our experience from one point of view resolves itself into relations, and that in principle all these relations take the form of the opposition of contraries. The most comprehensive form in which contrary terms stand related to each other is that of cause and effect; but he did not fully understand the scope of this notion and accordingly did not exploit it to the full. Else he would have discovered that the intellectual compulsion which insistently forces us to form a concept of substance is ultimately the expression of a fundamental form of relation.

Hume continued the argument of Locke, and in some respects he succeeded in penetrating farther into the facts than his predecessor. He had the advantage of a keener psychological sense than Locke, and made a finer distinction between sensations, images, and concepts. He succeeded in discovering connections, having something of the regularity of laws, in the formation of images and concepts, and, further, made a distinction between given events (facts) and relations. He does not analyse these facts and relations so far as to reach back to their ultimate elements; the relations with the consideration of which he begins are of so exceedingly complex a nature that he succeeds in throwing light on no more than some unimportant details of their structure, and his "given events" are not simple and immediate facts but complexes, the different entities within which are interconnected by the most various relations. It is clear that in this way he could not advance much farther, unless he owned the abnormally clear vision which Kant possessed.

Hume further investigates the foundations of our ontological judgments in so far as these lead beyond our sense-perceptions, which is equivalent to an examination of the justification of a kind of transcendence. But the transcendence with which he rests satisfied is of a very limited kind and is ultimately based on the concept of causality. It is the understanding of the causal connection that first gives us a kind of certainty. But the concept of causal connection in its turn is simply the result of extensive observation, association, and habituation. We apprehend it solely by inductive means, and it never becomes more than probable, however high the degree of its probability.

Thus we see clearly the reason and manner of Hume's abandonment of the straight road of cognition. He did effect a distinction between facts and relations; but he dealt with the latter only as applied to exceedingly complex facts which resisted a clear analysis; and accordingly he failed to progress very far in the direction towards the immanent prime form.

The most universal relation which he succeeded in discovering was that between cause and effect; and even this relation he apprehended only in that concrete form in which we meet with it in the natural order at one of the last stages of the survey—the stage of the organic forms and the world-forms. His concept of causality

enabled him also to effect a kind of transcendence. Our own transcendence differs from his in that it results from our understanding of the fact that there is an immanent prime form which forms the substratum of the whole of our experience, and from our understanding of the circumstances in which the concept of the individual is reached, namely, the principle of individualization. By virtue of this principle each individual form has assigned to it a correlated transcendent form which is its necessary complement.

We shall see the strange intuitive gift by virtue of which Kant was enabled to describe correctly and with great detail, albeit not explicitly, these facts, of which Hume never was aware. At the same time Kant stands at the forefront of the next period in the development of thought; for in the strange version of the apparatus of cognition which he offers, the prime form begins to become explicit at every point; and it was precisely this fact that was the immediate occasion of the further development associated with Fichte and Hegel.

There is a close connection between Kant, Fichte, and Hegel. Kant was the first to make a complete cross-section of the whole structure of human understanding. He did not penetrate into the system vertically; he lacked the vertical dimension of the natural order, and the final resolution in that direction remained hidden from him. Of the section, however, he gave a picture which, in the circumstances, could have been drawn with such faithfulness only by a mind endowed with an unusual measure of sensibility.

Fichte began from the horizontal section (so to speak) which Kant had drawn. Hegel, on the other hand, moved along the vertical axis for a very long distance, discovered a great number of sections, and demonstrated their connecting-links, which are arranged along the axis. But he did not succeed in penetrating to the very foundation; for he had not recognized the main pole of the natural order as such with sufficient clearness, and thus he was operating almost throughout with an unsatisfactory perspective. He did not occupy the most suitable standpoint for the survey of the whole, and thus he missed much that was of importance; and in order to master the mass of facts with which he found himself faced he frequently allowed himself to resort to a merely abstract outline. This deficiency is most noticeable in his natural science.

Kant was the first investigator of a region of which, before his day, only a few adjacent territories were superficially known.

This new region he surveyed and described. Fichte and Hegel, on the other hand, attempted to penetrate into its depths and by this means to understand its topography. Again, Kant was a great seer, who faithfully ordered and described his visions; Fichte and Hegel were more profound, and were remarkable, the former for his analytical acumen, exactness, and intellectual honesty, the latter for his unparalleled boldness and wide scope of vision—accompanied by an equally pronounced tendency leading to heterodoxy and breakdown.

9. Kant's Critique of Pure Reason

(a) General Remarks

General Impression produced by the Critique of Pure Reason—Importance of the Prime Form for its Understanding.

Kant's Original Attitude to the Prime Form. "Real Opposition"—Theory of "Real Grounds"—Underlying Facts.

Particular Axiomatic Forms used by Kant—His Starting-Point within the System of the Natural Order—Epistemological Solipsism—Kant's Standpoint and his Axiomatic Basal Principles.

In the *Critique of Pure Reason* Kant gives a more comprehensive description of the structure of human cognition than any philosopher had succeeded in giving before him. At the first glance this description resembles a highly complex and artificial structure of concepts, a structure which might be compared to a building with lengthy and often gloomy corridors and steep and winding stairs. Often a locked door bars our progress, and a halt must be made. But once we have found the plan of the building it begins to resemble a lofty castle, built in accordance with careful design, and furnished with delicate taste, full of great halls and comfortable rooms whose windows and balconies allow a wide prospect over the surrounding country. Many doors, however, remain locked, and the architect has not left us the key. In the condition in which he left it to us, the structure which he erected contains many secrets which are not revealed completely: all that is possible is, so to speak, to peer through a keyhole. Beside a wealth of the clearest knowledge much mysterious darkness remains; and, apart from the Bible, there is perhaps no book that has been the subject of so much written and spoken controversy as Kant's *Critique of Pure Reason*.

There is one master-key that admits us to almost every place, so that it becomes possible to survey and to copy the plan. This

key consists in the prime form, and in the natural order which can be derived from it by a process of analysis.

This one simple guiding idea was not expressly stated by Kant. At one time he had all but seized it; but though he was aware of this fact, he never succeeded in obtaining a clear formulation. This happened long before the publication of the *Critique*. In 1763 he published a strange monograph called *An Attempt to Introduce the Idea of Negative Magnitudes into Philosophy*. In this treatise he deals with the concept of opposition. He makes a distinction between real and logical opposition, the latter relating to two members which are mutually exclusive in every respect, so that they cannot be valid simultaneously, while in the former we have two actual entities which are opposed to, but at the same time can be valid when combined with, each other, like two forces acting in opposite directions.

Kant now proceeds to consider examples of this "real" opposition. In these examples the opposed members appear in a concrete shape, and, in a manner, as independent of each other. He next finds instances where the opposed terms stand in a rigid and invariable connection which is subject to laws. In this sense he deals first with magnets and then with electricity. He also holds that he is entitled to assume that a similar law of polar opposition may be assumed to apply to heat, and hints that there is a prospect that some day we may obtain a deeper knowledge of absolutely universal laws. "It would seem that the positive and negative activities of different kinds of matter, more particularly of electricity, hide much important knowledge, and that a happier posterity, whose good fortune we can already foresee, may succeed in deriving general laws from thence."

After these preparations, which lead him up to a more general formulation of the fundamental principle, he begins to look for an exact manner of stating it. He follows the analogy of mathematics, and distinguishes the opposed terms by assigning to the one the sign of plus and to the other that of minus; so that, if they are equal, their *arithmetical* result is equal to zero. In *actuality*, on the other hand, the result of their joint action is a certain definite effect. Thus he comes to the proposition that all the "real grounds" within the universe when summed together yield a result which is equivalent to zero. The application of this proposition was meant to be very general, as appears from the fact that the general concept of *becoming* is regarded as falling within his survey, and is treated

as the result of combining *arising* with *perishing*, the latter being given the sign of minus ("negative arising").

Kant makes some special observations upon the concept of the *real ground* which he employs in his proposition. He distinguishes between it and *logical ground*, and then proceeds: "This distinction between logical and real opposition is parallel to the one between logical and real ground which we have just mentioned." Where there is opposition, one term cancels the other; but where Kant speaks of ground, one term posits the other.

Kant had approached very close to the notion of a simple prime form consisting in a cleavage into opposites and a reciprocal positing. He felt that he was at the parting of the ways. "These considerations are small beginnings; but the beginnings frequently are small where a new prospect is being opened, and the consequences which they occasion may be none the less important." With characteristic reticence and caution he calls his search for a prime law "uncertain attempts", and expresses the hope that he may have the help of others in elucidating these important problems. It is all the more striking that in his later writings Kant did not explicitly pursue this idea any farther, although its presence manifests itself everywhere, and especially in the *Critique of Pure Reason*. In it lies the key of a full understanding.

In the *Critique of Pure Reason* the genius of Kant enabled him to apprehend much intuitively that he did not raise to a higher unity nor attempt to explore in all its detail. But in spite of this the fundamental order appears so clearly in every part of his system that it usually suffices to point out the guiding idea in order that it shall be recognized even in the most complicated parts of his work.

The main obstacle that stands in the way of an easy assimilation of Kant's ideas is the fact that Kant uses a great number of separate concepts which he treats as axiomatic without clearly defining their application. The words which he uses to describe them seem at first to imply an elaborate psychological system; thus he speaks of mind, understanding, outer sense, inner sense, spontaneity, receptivity, force of imagination, synthesis, etc. However, in so far as these concepts are defined at all, they are found to be the very simplest forms of relation; we have met them in the natural order, or can derive them thence without difficulty. The relations which he sets up between his concepts, and the

manner in which he employs them, agree exactly with the natural facts which the fundamental order shows us to apply to the forms of relation which we discovered ourselves.

Thus it appears that the subtle structure reared by Kant, in spite of all its complexity, has a great and simple outline. Kant obeyed a correct instinct when he followed the guidance of this outline. All the different axiomatic forms used by Kant and the connections subsisting between them are of such a kind as to fix within our own system of natural order the point where his own system begins. This point lies at the stage which we called that of the *individual*. From the more general form of this stage Kant frequently penetrates into the more complex relations of the organic (or psychological) individual.

So long as we remain at the stage of the individual form and refrain from passing back to previous stages we lack any kind of transcendence which would allow us to break through the formal barriers of the individual form, a form which at this stage reveals to us no more than our own ego, however true it is that it also points to something lying beyond by virtue of the fact that it contains a relation which we may briefly call "inner-outer". Kant has the strength to acknowledge the limits imposed by his point of view, and thus he is perfectly consistent in reaching a kind of epistemological solipsism. The latter manifests itself chiefly by the fact that the non-ego in itself can be defined only in a merely negative manner.

Apart from the fundamental relation "inner-outer" all the other fundamental relations, too, which we had found to be appropriate for the individual form are found to manifest themselves in the main basal concepts used by Kant. The first of these is that intermediate form of the prime determination which led us to form the concept of individual, namely the form of unity with multiplicity (Manifoldness); besides this there is the individual projection of the prime concept of the unity of two contrary terms each of which is the condition of the other. A characteristic variant of mutual dependence found with Kant is what we called Activity-Passivity at the stage of the individual form.

These three forms are the main elements in Kant's system. They dominate the whole order of his thought; he never discusses them, but simply treats them as data; and the two variant forms, that of reciprocal dependence (Activity-Passivity) and Unity with Multiplicity, are emphasized so strongly with him that they

determine the whole of the organization and arrangement of his system.

With these facts themselves we became acquainted already in the first part when we were forming the chain of concepts relating to consciousness. I propose here to give a brief conspectus of all that is relevant to this chain.

(b) Guiding Forms

1. "Reciprocal Action"—Activity and Passivity, Spontaneity and Receptivity. Understanding and Sense.
 2. "Unity with Multiplicity"—Combination with other Fundamental Concepts—(a) Unity of Action; (b) Unity of the Ego and the Non-Ego.
- General Arrangement of Kant's Work: Æsthetic; Logic (Analytic, Dialectic).

1. In the analytical fundamental order we found that when two sides are each the condition of the other this leads us to the variant which we called Reciprocal Action. This is the unity of two contrary actions each of which corresponds to the other. When our survey reached the stage of the *individual* we considered this form of relation from the standpoint of one only of the two sides, so that the whole of it appeared to be projected into this side. In this way the original form of reciprocal action passes over into that of a particular individual form—that of Activity-Passivity. Kant usually speaks of "spontaneity" and "receptivity", which is very nearly the same as Activity and Passivity. Here receptivity or passivity corresponds to the action of the non-ego: it is its projection. The action of the non-ego and the "passivity" of the ego which corresponds to it are posited by virtue of the reciprocal relation subsisting between ego and non-ego.

At the stage of the pure individual forms the contrary terms, activity and passivity, are rudimentary forms expressed in the simplest possible manner. But when the stage of the organic individual is reached they are united at so many points with other forms of relation that their concrete significance becomes far more definite and independent. Thus, for example, out of the original and rudimentary concept of action was developed that of force, by which was meant a potential power of the organism. Further, these various relations are the reason why Kant treats activity and passivity (or spontaneity and receptivity) as two separate

"powers". He calls them the two "main trunks" of our knowledge, and in the first part of the *Critique* they are practically equivalent to his "understanding" and "sense".

Kant assumes that these two trunks have one common root. He is unable to give any closer description of it, and it is clear from his writings that the root is not an independent entity distinct from the two trunks. It is, in fact, the primitive unity of these two contrary terms by virtue of which they are in a relation of mutual dependence such as is expressed in the Kantian concepts of *real opposition* and *real grounds*.

Further, in the first instance at least, understanding and sense are treated by him as the two sides (or poles) of a real opposition which are referred to each other, the general designation of the latter being Activity-Passivity; but this in turn is simply reciprocal action in its individual form.

2. With this form of opposition Kant soon combines another—namely, that of unity-with-manifoldness. With Kant the term manifoldness is almost exactly equivalent to our own *multiple determinateness*. We had already understood that determination as such is that in which opposition is started first of all: in a manner it stands between the opposed sides. In the category of the *individual* this intermediate position is emphasized particularly strongly; and this led us, in the first Part, to a third form of opposition, that of inner and outer. There, while determinateness is a property of the individual, and is referred to it, it also and at the same time points to an "outer".

Now with Kant we find exactly the same threefold relation which we developed in the course of the analytical fundamental order. On exactly the same lines Kant combines the opposition between spontaneity and receptivity, on the one hand, with that between unity and multiplicity, on the other, and, further, with the fundamental relation between inner and outer; referring spontaneity, inner, and unity to the region of understanding, and receptivity, outer, and multiplicity to that of sense.

Another element which plays a part in the Kantian distinction between understanding and sense is the connection between determinations and relations. In the prime form this relation was of fundamental importance. With Kant, determination or multiple determination, or manifoldness, is the immediate datum of sense-perception, whereas that which we meant by relations is the most general term for that which Kant calls understanding; so that in

the Kantian sense understanding might well be called the capacity for relations.

In this way there results a fourfold system of relations; two of the notions reached in this way are of particular importance.

(a) From a combination of the concepts of spontaneity (activity) and unity there arises the "unity of action" of the mind. When referred to the manifold that is combined into a single action, Kant calls this unity of action synthesis. This in turn passes through a number of gradations and finally leads to a series of separate concepts, to disclose the relation between which is one of the chief functions of the *Critique of Pure Reason*.

(b) A combination between "unity" and the fundamental relation called "inner" results in the "unity of consciousness" and ultimately in the "ego". The stages which lead up to these various concepts have been rationally explained in our Analytical Order; Kant accepts them more or less intuitively.

When this same unity is projected into the "outer" this leads to a counter-pole of the ego, to a *focus imaginarius* which is closely related to the concept of the *thing in itself*.

These variants of the prime form are the forms which guide Kant in the arrangement of his system.

1. In the *Æsthetic* a form of opposition is considered with which we became acquainted mainly as the individual shape of reciprocal action. This is the Kantian relation between Spontaneity and Receptivity. More particularly the *Æsthetic* deals with "sensibility", which extends over the region of the "intuitions".

2. In the *Logic* the relation between unity and manifoldness is the main consideration. It has two main parts.

(a) The Analytic treats in the main of unity in the "synthetic" sense, where it is equivalent to understanding. The "concepts" are the proper region of the latter.

(b) The Dialectic treats in the main synthetic unity in so far as the latter is projected outward; that is, in the "systematic" sense, where its meaning is equivalent to "reason". The "ideas" are the proper region of the latter.

All this is no more than an outline, and it remains to be seen at a later stage to what extent it proves useful and to what results it leads us.

(c) Peculiarities of Kant's Exposition

Kant's Relation to the Fundamental Form—Difficulties due to his Terminology. Material with which he Works—Natural Order as Pointing the Way.

Lack of Accuracy in Kant's Terminology—Its Causes—Definitions by Stages—Natural "Range of Resonance" of his Ideas.

Examples: Activity and Passivity—Unity and Manifold—Understanding and Sense—Links between Understanding and Sense. First Form of the Link—Unity and Manifoldness—Significance of Intermediate Links as Adequate Forms of Order—Their "Range of Resonance"—Second Form of the Link between Understanding and Sense: Activity and Passivity.

General Requisites of an Analysis of the Kantian Position.

Before following the argument of Kant in detail some prefatory remarks must be made about the peculiarities of Kant's exposition.

The great importance of the element of opposition in the structure of Kant's *Critique of Pure Reason* was remarked on very soon after that work first appeared: but the deeper significance and the scope of this fundamental form were not appreciated at the time, and even Fichte, whose vision was perhaps the keenest, did not see in its completeness the inner connection of the guiding concepts and arguments of which Kant makes use.

There were many who thought that Kant offered them no more than the old dualism of form and matter in a new shape. Such a view is not absolutely wrong: but it does not go to the root of the matter. The fundamental relation which Kant followed was of far more general scope, and the whole tenor of his argument was guided by a profounder law, of which he himself was not fully aware.

What prevented his critics from taking this deeper view was the fact that the two sides of all the oppositions which occur in Kant were generally taken as essentially distinct, and not as two terms each of which is the condition of the other, while at the same time they are merged in one unity; while it is precisely this reciprocal relation between the main basal concepts which is of essential importance in the arrangement and the interpretation of the Kantian theory. To use Kant's own distinction, we are dealing here throughout, not with "logical" oppositions, but with "real" oppositions, and also with real grounds, of the most general character.

The cause of these misunderstandings and errors resides in the main with Kant himself and is due to the manner in which he developed his ideas and designated his main concepts. The pure

form of reciprocal relation often passes into the background; and the reason of this is that, when forming his concepts, he does not confine himself within the limits of the pure individual forms, and frequently passes over these limits, which, in any case, are somewhat indistinct, into the far more difficult region of the organic forms. This manifests itself externally in the fact that Kant's terminology frequently has a close resemblance to that of the old empirical psychology. Thus he speaks of disposition, understanding, of mind, and of outer and inner sense, as though they were actual organs of the mind; and, further, he uses such terms as capacity, faculties, and actions of the mind.

Naturally there was no lack of commentators who explained this apparently pointed division into senses, faculties, and actions of the mind as being due simply to the external manner of the Kantian exposition, while maintaining that the essential and truly Kantian element was the natural inner connection of contraries. But it does not appear that any writer examined the Kantian method thoroughly under the point of view of a guiding idea of this nature; and as a result there are many critics even now who cannot make up their minds to treat the *method* of Kant's exposition as merely external, and to admit that the kernel of the different faculties and organs between which he draws distinctions consists in an inner form of relation by virtue of which they converge in a 'common root'.

Kant did not make it an easy task for his readers to penetrate through the surface into the depths of his intellectual system, the more so since the surface is not always smooth, as, for example, when he is inconsistent in his terminology or confuses the reader by an apparently contradictory manner of exposition. On the other hand, Kant never fails to draw attention to the deeper aspect, and again and again points out the right direction.

In building up his system Kant uses two kinds of material. On the one hand, he makes use of the simple manifold of data which cannot be further defined; to this he occasionally gives the name of the *actual*. It roughly corresponds to the multiple determination of the surface of reality which was discussed above, and is the first foundation, the stuff, so to speak, of experience. On the other hand, Kant deals with the capacities, faculties, actions, etc., of the mind. To describe these he generally makes use of ambiguous terms having a psychological colouring; but in detail he has nothing really important to say about them, except what would equally

apply to pure forms of relation. He speaks of mind, of sense and understanding, force of imagination, reason, concept and intuition, experience, cognition, impression, object, a priori and a posteriori, analytic and synthetic, and the rest; but when he comes to a more exact definition of these terms, he defines them almost solely by means of the concepts of unity and manifoldness, activity and passivity, inner and outer, and such other forms of relation as result from the interrelation of these three pairs of contraries.

Further, Kant does not make use of these forms of relation only in order to define his fundamental concepts; the reverse, too, is true. A simple analysis of the natural forms of relation results in presenting us with the exact picture that Kant unfolds in its main order and chief characteristics, although of course it does not extend to the peculiar variants of the Kantian exposition. These, indeed, have a certain arbitrariness. It is not, however, the external forms that are important, but the resulting total picture and its composition; and for this composition our natural order affords us a more satisfactory perspective.

If we follow the guidance of this natural order, most of the difficulties and apparent contradictions of the Kantian system disappear. In most instances it is easy to show that they result from the standpoint that Kant had elected to take up, and from the manner in which he applied his method of *projection*.

One other consideration must be borne in mind if we wish to surmount the difficulties of the Kantian exposition, which is, that all the basal concepts used by Kant in his system suffer from a certain vagueness. In part this is due to the great difficulties with which Kant had to contend. Other difficulties are due to the fact that Kant worked on different parts of his work at very considerable intervals, and that the work grew under his hands. Here and there also he may have nodded. All this, however, does not play an important part.

But there is another and a more important peculiarity in Kant's exposition. In places where an exhaustive treatment of a concept might be looked for, he emphasizes that one side only of it which happens to be of importance at the moment, while at another occasion he will be found to emphasize the other side. What he fails to make clear is that these sides have an inner connection due to the fact that they are two aspects of one complete concept. In this way he confuses the reader and leaves it to him to look for the higher unity. Thus, for example, he first defines the concept of

understanding by placing the notion of "spontaneity" in the foreground; while at a later part of his definition he lays the emphasis on the analytic and synthetic "unity".

The most important fact, however, is that Kant's concepts have a certain range within which they are, so to speak, tuned in. This *range* is due to the fact that the concepts used by Kant are part of a more comprehensive fundamental relation within which contrary terms are united. Kant's concepts are simply various aspects or variants of this fundamental relation, and all these variants can be linked up with one another through an indefinite number of intermediate stages. Thus a rigid definition is neither practicable nor indeed desirable; for in the course of our survey the picture changes with the slightest change in the point of view. Hence transitional and intermediate shapes are taken on by the concepts: but these give an illogical impression only if they are cut away from the fundamental relation on which they are based.

The danger of some kind of confusion exists wherever any given concept is removed from the formal structure of which it forms a part, unless a particular definition of this particular concept is made in which the complete structure is taken into consideration. Now Kant did not set out this structure explicitly; and every concept that he removes from the structure of which it forms a part remains linked to all those other sides of the main relation that might be similarly isolated; and it will lead to one side or the other according as the student follows one or other of the chains of relations attaching to it.

One-sided concepts, or projections, are contained implicitly in the main order. Every such concept is inevitably a term in a relation by virtue of which it contains the other sides in a functional sense; so that, however abstractly the one term is taken, the other sides are still immanent in it, and immediately and inevitably control the direction of the relations into which it enters. The simpler the concepts, the more obvious does this become.

Thus there is no passivity without a corresponding activity: the two belong to each other and form one identity, and if the concept of passivity, for example, were taken by itself in the most abstract possible manner, the relation to an active counterpart would still enter into the concept of passivity which the attempt had been made to isolate; unless, indeed, the concept is abstracted from until it ceases to be passivity and becomes nothing, and all that is left is an empty word.

The same applies to unity and multiplicity, and unity and manifoldness. There is no absolute synthetic unity: unity exists only in connection with multiplicity, and there is no multiplicity that is not somehow connected with unity. The highest exertion of abstract thought cannot sever the two and leave valid concepts. Unity is always manifold unity, and manifoldness is always manifoldness united. Much the same applies to *inner* and *outer*. All such interrelated concepts are separable only relatively.

Thus Kant defines understanding as the faculty of *unity*. But this is true only of understanding as applied to the manifold, which is the object of sensibility. Understanding is "realized" only through this latter, and at the same time it is also "restricted".

Sensibility, on the other hand, is defined by Kant simply in the fact that the manifold *is given*. But at the same time the manifold must have a unity, and accordingly Kant speaks of this primitive and indissoluble "unity of pure intuition". This unity he is compelled to set down to pure sensuous intuition isolated by itself; ultimately it is simply the unity of understanding.

Thus we see that Kant begins with a rigid separation of understanding and sense, but cannot maintain the separation. He is forced to compromise, and he constructs lengthy lines of communication between these two faculties, as though in this manner he could avoid too immediate a junction between the two. But in spite of this he cannot prevent the concept of understanding, as he himself uses it, from overlapping largely with that of sense, and conversely.

It may be worth while to follow one such line of communication. In order to simplify we may take *sense* as simply equivalent to manifoldness (or multiplicity) and understanding as equivalent to unity. It is true that the whole of the relation between understanding and sense also contains, besides the relation between unity and multiplicity, certain others mentioned above. We will, however, pursue the Kantian line of junction simply from the point of view of *unity* and *manifoldness*, admitting only a slight element of *activity* (taken as the positing of unity).

Kant begins with the simple datum, the manifold, which as such is absolutely unrelated to unity. At this point the line of junction commences.

The next stage is space. Kant looks at it as the comprehensive form of sense. Here we see the first trace of unity.

The following stage is that of inner sense. It is that of the mani-

fold as apprehended by unity (or the conscious positing of unity) but at the same time as standing in opposition to this positing.

The next stage consists of time as the comprehensive form of the inner sense: it is a further step of the development of the manifold into unified manifoldness.

Next follows an intermediate form: the force of imagination. Here the positing of unity is amalgamated more completely with the manifold. This is a pure form of opposition. Kant introduces it formally as another faculty of the mind, a link between understanding and sense: but he also analyses it and finds that apart from understanding and sense it has no meaning; that it follows exclusively from these two, and that, apart from being a form in which they are related, it is nothing at all.

The next stage is that of the categories. These belong to unity—a unity referred to the manifold, and, with respect to it, synthetic. The unity here is a manifold unity.

After this comes understanding, treated as the faculty of synthesis. As such it implies the positing of unity within the manifold; it is taken as standing in opposition to this manifold.

Finally the transition beyond understanding takes place and the simple unity of consciousness is reached—the transcendental identical unity of the ego.

This lengthy chain of intermediate links between pure unity and pure manifoldness might, of course, be made longer still if necessary. Each link is a different order adapted to a special need, and all of them can be subsumed under the one relation of unity-multiplicity. They are special concepts and were formed for a practical end, and we must look at them simply as subsidiary forms under which facts are looked at which seemed to Kant to be particularly apt to represent the relations immanent in the whole structure of consciousness; they all are posited through the one prime form (unity-multiplicity), and transitions can be found to connect any two of them.

It is this peculiar inner connection which causes each of the intermediate links intercalated by Kant to have what I called above a certain *range* within which it is “tuned in” for the purposes of his survey and may validly be used. All these concepts are simply different one-sided aspects taken from an indivisible underlying concept. Hence the content is always ultimately the same, while functionally it is formulated in different ways. But this functional element is continuous, and permits continuous transitions.

In tracing this line of junction we had concentrated our attention

exclusively on one form of opposition, that of unity and multiplicity (or manifoldness). In an exactly similar manner it would be possible to analyse the concept of activity-and-passivity, and in doing so we would work out a similar series of intermediate forms. During this process we would throw light on the relation between the Kantian concepts of receptivity, datum, outer affection, apprehension (including search and actual holding fast), reproduction, synthesis, spontaneity, and apperception; and especially the relation between inner and outer sense, and between these two and understanding, would be further illuminated. We shall yet revert to a part of this question.

It is not easy to find a way through the intellectual maze of the Kantian exposition unless the relations which lie at bottom and the whole complex of facts be kept steadily in mind. The difficulties of Kant's *Critique of Pure Reason*, which we described above, make it impossible to infer the meaning at any one point: it must be extracted from the whole complex of facts. Kant himself once urged on Fichte that he must be taken with absolute literalness; but such a counsel should be followed all the less because when Kant made this demand he was already near to his end and far declined from his powers.

All these are reasons which would compel us conscientiously to go back to the sources if we would explain the internal structure of the Kantian *Critique*. However, all I can do here is to give a general conspectus of the chief results in so far as they affect the place that has to be assigned to the views of Kant within the Natural Order. Accordingly I now proceed to an outline of the logical structure of the *Critique of Pure Reason*.

(d) Outline of the Critique of Pure Reason

(a) The Æsthetic

General Meaning of Understanding and of Sense—Kant's Definition of Sense—The Relation between Inner and Outer—Relation between Inner Sense and Outer Sense—Indications given by Kant about the Solution of the Problem—Confirmations of this View—Further Confirmation in the *Analytic*—Space and Time.

The subject with which the Æsthetic deals is Sensibility, and sensibility together with understanding forms the two "main trunks" of knowledge, the two "main sources of the mind".

With Kant, *mind* does not mean an actual entity like the soul; at first, at any rate, it means merely the higher unity of the opposition between sense and understanding. But sense and understanding again, as has been remarked above, are not taken by Kant as though they were parts, organs, or, indeed, *things* of any kind whatever, whether physical or metaphysical. He takes them as a kind of form of relation, or rather as a structure composed of such forms. There is no decisive passage anywhere in the works of Kant implying anything beyond this view.

For sensibility Kant has a number of descriptions. In one passage he calls it receptivity, in another a passive *attitude*. Again, he states, somewhat negatively, that it is "the manner in which the manifold is given in the mind *without spontaneity*". When this takes place the mind "receives" something, "in so far as it is *affected* in any manner whatsoever". All these expressions have passivity in common; and passivity is the one-sided emphasis of one term of a form of relation which of necessity has two; a form which at the stage of the individual forms is activity-passivity, but at its supra-individual stage is "reciprocal action".

But the one-sided emphasis laid on passivity (or receptivity) does not destroy its relation to the other side—to activity or spontaneity; passivity finds its fulfilment only in an action that is limited by a counter-action. It is this internal and indestructible interrelation between the two opposite sides of one fundamental form that is, so to speak, the driving force for the whole of the subsequent development. Already in the *Æsthetic* the concept of manifoldness combines with that of passivity. Sensibility relates to that which is *given*; and the given is a manifold. Kant assumes that it is given passively, by means of what he calls an "affection". In our natural order this manifold corresponds to the multiple determination of the Given, and this in turn at the stage of the individual forms usually appears combined with the concept of passivity.

For Kant, by the side of Reciprocal Action, in its individual form, the contrary relation of inner and outer begins immediately to emerge; and this latter relation, as we saw in the first Part, is based on the peculiar position of Determination (or, more precisely, multiple determination) within the Individual Form. With Kant the relation between inner and outer leads in the first instance to a cleavage within sensibility, which is divided into two opposite senses, the "inner" and the "outer".

At first these two senses have a somewhat enigmatical position with Kant, as though they were two faculties or organs of the mind which might almost be supposed to have a background of actuality. Kant asserts of them that the outer sense allows us to look at objects *as lying outside us*, while the inner permits the mind to look at itself and its different states. In the second edition of the *Critique*, the relation is given an even more mysterious turn by the assertion that the outer sense is affected from without, and the inner by the mind itself. However, the significance of this self-affection, mysterious as it is at first, becomes easily comprehensible if we go back to the fundamental form of reciprocal action and remember that it is a pure form of relation. If we omit to do this, the relation remains utterly obscure.

All the explanations given by Kant himself, when he attempts to make this peculiar relation more intelligible, point in the same direction. In one passage he says that "self-affection" is simply intended to mean that the mind "seeks" or "apprehends" that which lies within itself—that is, that which is given to it by virtue of the outer sense. Now this search and apprehension which allow us to speak of self-affection are nothing else than variants of the spontaneity of understanding, and consequently of activity.

In order to understand their ultimate meaning we must, first of all, disregard the psychological flavour which this concept of self-affection derives from its description as a search; a description which, as such, has no immediate relevance to the fundamental outline which Kant draws. Next, the special form of activity must be looked upon as a counter-action of the mind, corresponding to the "affection" which comes from "without". This affection is some kind of action on the mind; and it is this interaction—this unity of the external influence and the internal reaction thereto—(affection and apprehension) that induces its passive attitude in the mind. It is in this way alone that, in Kant's terminology, a passive state of the mind is "realized"; which means that this state becomes a real state of the mind, a state of consciousness which, as such, is "intuition". This real intuition is "inner intuition".

There could be no outer sense existing by itself. The concept of the outer sense, by virtue of which the outer affection is taken as "given" to the mind, is a purely abstract preliminary to the discussion of the simple process of intuition, and its function is to facilitate the process of analysis. It is only when the next stage of the survey, that of the inner sense, is reached that the *given*

is taken as a real *affection* of the mind itself, that is, as a state of which we are conscious, or, what is the same thing for Kant, of which we have an inner intuition. Thus the concept of the *intuition of the outer sense* is no more than one side of the whole of the form of relation which we call intuition; by itself, and unrelated to the inner sense, it would be meaningless.

Now with this argument Kant connects yet another. The state of the mind by virtue of which a real intuition has come about has a bilateral reference—a reference inwards, and one outwards. If the state of mind is referred outwards, it is called *intuition of the outer sense*, in the narrower meaning; and if the same state is referred inwards, it is called *intuition of the inner sense*, in the narrower meaning.

These two concepts, then—the intuition of the outer sense and the intuition of the inner sense—are reciprocally interdependent, and are so in two meanings. In the sequel we shall find throughout that these two meanings are invariably intermingled more or less. But in each of the two meanings, *inner* and *outer sense* are simply two sides of a single whole which in our experience are never found to occur separately; in the one of these meanings they are the two sides of a process—the process by which an actual impression is originated; in the other they are the two sides of the impression itself.

If this view is correct, then Kant's exposition should clearly manifest the fact that both in inner and in outer sense we are dealing with one and the same actual external impression. If this impression is looked at from two different points of view, this is a merely theoretical procedure; so that it should appear clearly that the object of the intuition of the inner sense is one and the same as that of the outer sense.

Now, in fact, this agrees exactly with Kant's further remarks about the relation between the inner and the outer sense. Again and again he expresses himself to the effect that "the whole material—even that which is presented to the inner sense"—is derived from without; and that, with the inner sense, "those representations which are derived from the outer sense are the stuff that constitute the real material with which we furnish the mind". Thus the object of the inner sense is not intended to differ in any way from that of the outer.

The only difference between the two senses consists in the point of view and in the form of relation. The same "modification" of

the mind belongs to the inner and to the outer sense, "according as it is referred to one or to the other kind of sensuous intuition"; and it is solely on the *direction* of the reference that the distinction between the inner and the outer sense depends. Thus, for example, the outer sense "is" already in itself "a reference of intuition to something actual lying outside me".

Now the outward and the inward reference do not stand side by side as two distinct and independent forms; they are, on the contrary, essentially interconnected and inseparable. Kant actually says of them that they are "identically connected". It is in this manner alone that everything fits into our fundamental order; and in this manner the relation between Kant's two senses, so often discussed and misunderstood, is explained in the simplest and most natural way.

All this will become still clearer below, where we come to examine the way in which Kant renews his discussion of this whole question from a different point of view in the next section of the *Critique of Pure Reason*—the Analytic. In that place he speaks of the inner self-affection out of which the inner intuition arises, in contrast to the outer affection, by means of which the manifold is "given". According to him, the influence of the understanding upon the "passive" subject, as a result of which the latter is "affected" in the inner sense, is identical with the "uniting" of the manifold of entities given through outer affection so that they become a unity; in other words, it is the simple reaction of the active mind (the mind, that is, in its function as positing unity) to external influence. In this way the last doubt is removed about the relation between the two senses and the real meaning of self-affection.

The relation between inner and outer affection agrees approximately with that between action and reaction, which are functionally the same, but are looked at from different sides. There is here the same process and one and the same actual state. At the same time we see here how the form of activity-passivity combines immediately with unity-and-manifoldness, and how the whole meaning of sensibility is comprehended in these forms of relation.

Before we pass over to the Analytic we must make an observation about space and time as "forms" of the outer and the inner sense. Kant takes space and time as being simply given. He does not examine them at all adequately; more especially he omits to throw light on the relations which are the main characteristics of space

and time; and he fails to show how the forms of relation which we call space and time are internally connected with those fundamental relations by virtue of which it is possible to speak of inner and of outer sense. In this connection the *Æsthetic* shows us one result only, namely, that for Kant both space and time are forms of *unity* in which understanding *unites* the manifold by "apprehending" it, there being an outer as well as an inner sense in which the process of uniting takes place.

For Time Kant provides a tardy discussion of this kind in the *Analytic*. In the course of an exceedingly interesting discussion he shows in detail how it is possible to treat time as the particular manner in which understanding unites the manifold; that is (in terms of our previous examination), how it "affects" the subject from within, after the subject has become passive towards that which is without. It must be admitted, however, that Kant does not succeed in advancing beyond this "Schematism".

In fact, however, it is possible to trace the fundamental relations which allow us to speak of an inner and an outer sense within the framework of the individual forms, and by a purely analytical method, until the main outlines of space and of time begin clearly to emerge. It is obvious that the analysis must be carried up to this point until a full light can be thrown on the epistemological meaning of space and time.

(β) The Analytic

Kant's Attempt to Elucidate the Relation between "Inner" and "Outer Sense"—Amalgamation of "Spontaneity-Receptivity" with "Unity-Manifoldness"—New Concepts Emerging Thence—Their General Peculiarity—Forms of the Same Fundamental Relation—First Example: "Force of Imagination"—Second Example: "Synthetic Faculty"—Conclusion Drawn Thence. The "Highest Point".

Further Variants of and Interrelations between Kant's Main Concepts.

Importance of the Fundamental Relations already found to Subsist between Kant's Concepts—Danger of a Psychological Interpretation.

The Original Forms of Understanding—The Categories—Supreme Concept: "Object in General"—The Two Characteristics of the "Highest" Point—Kant's Attitude to the Analytical Derivation of the Categories—His Vision of a Natural Order.

The "Scheme" of the Application of the Categories.

We have seen that inner and outer sense are two different sides of the one sensibility, or indicate two opposite relations in which it is a term. These two senses are firmly united with each other

and with "understanding" by means of the two fundamental relations: inner-outer, and activity-passivity ("Spontaneity"—"Receptivity"). Now we have seen how in the *Analytic* these two bilateral relations are amalgamated with another fundamental relation—with that of Unity-Manifoldness. It is the main function of the *Analytic* to demonstrate the importance of this relation, and of the new amalgamation.

We have also seen how a new light is shed on the relation between inner and outer sense. It is a relation to elucidate which Kant exerted great efforts, and in the second edition of the *Critique of Pure Reason* he completely revised the part of the *Analytic* dealing with this problem, employing a whole series of different expressions in order to seize its ultimate essence. For this very reason the impression is raised, in such passages, that Kant is still before a locked door and is striving in vain and by circuitous methods to obtain a view of the region that lies behind it. What he succeeds in discovering is right; but many facts remain hidden from him which, rightly appreciated, would have facilitated a view of the whole problem.

We have seen the shape in which the system of facts presents itself as a result of the amalgamation with the new form of opposition. "Spontaneity" is simply that action of the understanding which consists in the introduction of unity into the "given" manifold; and this latter is equivalent to the *mind* taken as purely passive: it is an abstraction. Now this "uniting into unity", this "action exercised upon the manifold", also enables us to speak of "Self-affection". It is only because the manifold can be taken as a *united* manifold that it is an actual state of consciousness—a state, that is, of the inner sense. The outer sense is no more than an abstraction from this actual system of facts. In the first instance, it is one side only of the process which in reality is one and indivisible; and it achieves its peculiar importance by means of the bilateral reference of the actual state of consciousness—the relation inwards, and the relation outwards. The combination of the simpler system of relations with the fundamental relation of unity-manifoldness enables Kant to form a new set of concepts; and these prove of assistance in the further course of his investigation, and permit him to form a number of fresh concepts and to elucidate complicated facts. He now reaches such concepts as *synthesis*, *apperception*, *synthetic unity of apperception*, *force of imagination*, *concept*, *category*, *schema*, *object*, *thing*, *ego*, and many

others, all of which depend in a great measure on the form of relation of unity-manifoldness. If we set aside the psychological element, which is not essential to the Kantian main outline, these new concepts are no more than simple variants of this fundamental form, combined with the other forms of relation. Everywhere it is plain to see how Kant allowed himself to be guided by this fundamental relation when he was forming his different concepts; and the system that is built up from them can be derived in all its essentials from this one fundamental relation.

In his description of these new concepts Kant generally makes use of a psychological terminology, calling them faculties, actions, or capacities; but he defines them almost invariably by means of characteristics of such forms of relations as result directly out of his fundamental form. Frequently he also resolves them into other forms; and this is possible only because such "faculties" (or whatever else he may call them) are not at bottom considered by him as being independent, but are only different manners in which a common fundamental form is looked at.

For an example we may take that which Kant calls force of imagination. This faculty of the mind is supposed to be an intermediate link between understanding and sensibility, which at the outset are in complete opposition. In certain passages Kant gives to this faculty of imaginative force a psychological flavour, of faculty of recollection and of association. Now these cannot be apprehended in so simple a manner as the relation between understanding and sensibility, for they belong to a different stage of the survey—to the stage of the organic individuals; nor have they any essential importance for the point which Kant is seeking to establish. He himself declares that this imaginative force is simply a peculiar designation for the "synthetic influence of the understanding on the inner sense", and that to this extent it must be considered as dependent on these two.

Taken together with the previous explanation, this declaration of Kant perhaps shows most clearly what is his aim, and proves that imaginative force is for him not a definite independent faculty or implies an actual organ of the mind, but that it is simply a hypothesis or auxiliary structure, being one among a number of possible forms under which the basal relation of unity and manifoldness, and activity and passivity, can be examined. This further shows that, according to Kant's own view, the exposition of such facts might be determined by considerations of expediency.—I dealt

with the particular importance attaching to imaginative force in this sense for Kant when I spoke of his intellectual bridging of the cleavage between unity and manifoldness.

We may take yet another example. In the first edition Kant distinguishes between three kinds of original unity (or synthesis). First, we have the synthesis of apprehension, which applies to sensibility and leads us to the "forms" of space and time by which the manifold is comprehended into one. Secondly, there is the synthesis of reproduction, which belongs to imaginative force; and, thirdly, there is the synthesis of recognition, which relates to the concepts.—All these three synthetic faculties he calls "three subjective sources of knowledge", and even asserts of them that they alone make understanding possible.

However, the first edition also contains a number of references to a higher unity of all these "faculties" and syntheses; and in the second edition Kant says boldly that every process of uniting, even when it has the *pure form of sensuous intuition*, has its sole source in *understanding*.

There is no contradiction between this and Kant's previous assertions. At an earlier place the different synthetic faculties had been set out as so many merely practical forms: in the passage now under consideration he dissolves them again; they are now reduced to different ways of looking at one and the same fundamental relation, and this relation is the positing of unity. This process he also calls the synthetic "action" of the understanding, and in this connection he also speaks of the "spontaneity" of the understanding.

Next he carries his consideration a considerable step farther by deriving understanding from another and still more comprehensive entity. This he effects by deriving the process of the positing of unity, and hence understanding, from the original unity of consciousness, that is, from the transcendental unity of apperception, which in turn, and from another point of view, is nothing other than "persistent self-identity".

This procedure makes it plain once more that all the faculties, capacities, and so forth of which Kant speaks in the *Critique of Pure Reason*, including understanding, are simply different ways of looking at the same fundamental relation; they are treated, not as having a psychological significance, or as though they were organs, still less as though they were of the nature of substances; they have merely a logical and analytical quality, which makes it

possible to derive them from a fundamental concept which they have in common.

It is this idea which directs the course of Kant's argument, although he himself was not fully conscious of it; and, this being so, it must obviously be a capital task of philosophy, in the Kantian sense, to trace back the "faculties" and all the other variants to one fundamental concept, and, conversely, to derive all the variants from such a concept by logical and analytical processes.

Indeed, such a view was not altogether foreign to Kant, as appears plainly from the passage mentioned above, where Kant traces back all the faculties of synthesis ultimately to the transcendental unity of apperception, to which he assigns a place superior to understanding. There Kant speaks quite definitely of a "highest point" which he claims to have reached, and to which the whole of the transcendental philosophy must be "attached". This is for him the "highest principle ruling the employment of understanding". In another passage he treats the "highest point" in a somewhat different manner: to this we shall yet revert.

It is true that Kant was unable fully to exploit the "highest point" for the purposes of the transcendental philosophy. Fichte, on the other hand, at a later time took it as his starting-point, from which he proceeded on an opposite road which led him to understanding and sensibility by analytical processes.

An abstract outline for the most important of the fundamental concepts and their interrelation was discovered above: it was based on the one particular form of relation of unity-and-manifoldness. Here some supplementary observations must be made, resulting from the combination between the three subsidiary forms of unity-and-manifoldness, activity-passivity, and inner-outer. Clearly at this place I am confined to the most abstract possible outline; however, though there is great danger of misapprehension where newly formed concepts are merely hinted at, I still consider it safe to give these indications in order to supplement my previous remarks.

"Experience", in the Kantian sense, is united manifoldness. The action of uniting, looked at by itself, is spontaneity; if considered as a kind of faculty, it is understanding.

The manifold, taken as something given to the mind without spontaneity, is receptivity or passivity; taken as a faculty, it is sensibility.

The act of uniting, taken as applied to the manifold, is synthesis; the given manifold as such, but at the same time taken as united, is the "object"; the unity of understanding, taken as applied to the given manifold, is the "concept".

The given manifold—considered by itself, as given from without and having no element of spontaneity, and, further, as being apprehended as thus given by the mind, which in turn is treated as purely receptive—is the outer sense. The immediate form of unity in which understanding apprehends the manifold, when it is treated as being given in a purely passive manner, is space.

The given manifold, taken in its reciprocal relation to spontaneity, and as determining and limiting or "restricting" it (by which process the Given is taken as a modification of the mind), is the "inner sense". The form of manifoldness which is derived from the understanding, by which the manifoldness is united—this manifoldness being taken as a modification of the mind, and not merely as given "for" it—is time.

The unity within the manifold when combined with the fundamental relation of inner-outer, and when referred to the Inner, leads to the concept of the empirical ego. The manifold, when in its united state, and combined with the reference to the Without, leads to the concept of the empirical non-ego, for which Kant generally uses the periphrasis of "the Outside of me", in contrast to "the Within me", which points to the ego.

In our analytical order the fundamental relation of inner-outer is reached through the *datum* of multiple determinateness. To this given multiplicity there corresponds with Kant sensibility, which is manifoldness abstracted out of synthesis. The relation of inner and outer being thus severed in two through sensibility, its last and most abstract emanation is "ego in itself—thing in itself". These two are opposites, and as such repel each other to the utmost degree, and at the same time each is most essentially the condition of the other. They coalesce into one unity so completely that Kant speaks of an "identical combination".

In a similar manner all the other forms which emanate from the fundamental relations are to be looked at as forming, each for itself, an identical combination. This applies to sensibility and understanding quite as much as to inner and outer sense.

The fundamental relations which have been roughly outlined here are not merely external characteristics of the different "faculties", etc., of the mind. On the contrary, they form the kernel which determines the whole of the survey. Almost everywhere they stand in the foreground of the Kantian definitions, and determine the interrelation of his main concepts and the order of his whole system.

For the general survey and structure of the system it is irrelevant whether the forms of relation apprehended in this manner have for substratum some additional particular entity of a psychological nature—something of the nature of an organ or a substance. Kant is cautious enough to observe silence about this question of such an "addition"; and in spite of many words and expressions which might easily tempt him beyond the limits of his system of axioms, he keeps strictly to the self-imposed abstract foundation almost throughout his work. Now this foundation lies in its entirety within the framework of our fundamental relation and its variants.

This abstract view of the Kantian philosophy is essential to a complete understanding of his system. And it is adequate to this end. But not only this: it also leads us far beyond it, showing us the origin and the interconnections of the axioms which are the foundation of the system, and the changes which would be brought about in our general view if we were to select a different set of axioms for foundation. At the same time the supra-individual connections joining the philosophy of Kant to that of other thinkers become plainly apparent.

If Kant's main concepts are taken in this abstract manner, they cannot be treated as more than the germs, within the meaning of the natural order, of those entities which are denoted by the Kantian terms. Words like *mind*, *understanding*, *sensibility*, and *force of imagination*, etc., contain more than a hint that the abstract forms of relation on which they are based are not all, and that ideas drawn from empirical psychology, and corresponding to the most complex organic forms, enter into them. Indeed, relations exist which connect these abstract fundamental forms to the above psychological forms, the main characteristics of which they determine. But still there is something wanting which would determine the peculiarity of the psychological forms, and this Kant failed to discover. Hence his psychological terminology is an anticipation and an "interpretation" of the abstract system, and it contains a danger that we may be tempted to leave the strict

limits of the fundamental system of axioms and to wander in the regions of the irrational.

In the *Æsthetic* Kant found certain fundamental "forms" for sensibility, namely, time and space. Similarly, in the *Analytic*, he tries to find forms for the understanding. From our previous argument it follows that these must be forms of relation, and not mysterious *somethings* of any kind. In practice it will prove difficult to dispense with Kant's psychological terminology; but he says himself that these forms of the understanding are only "so many ways in which thought refers itself to its objects"—that is, they are forms of relation, or subsidiary forms of synthesis. To these subsidiary forms he gives the name of concepts; the most universal forms of this kind he calls categories (Universal concepts).

The highest and most universal concept of all is the concept of the "object in general". This description, again, is an anticipation of a wholly abstract version of the fundamental form of unity-with-manifoldness. In this particular variant the emphasis rests on unity. The relation subsisting between this highest concept and the categories is of such a nature that all of them are so many different variants of the superior concept.

Kant now states that any future transcendental philosophy must begin at this highest concept. Now this recalls another passage in which Kant spoke expressly of a "highest point" to which he intends to "attach" a future transcendental philosophy. At that place this point was the original synthetic unity of apperception: here it is the concept of the object in general. We have a right to assume that Kant did not intend two essentially different highest points, and, in fact, the concept of the object in general and that of the unity of apperception are simply one and the same unity looked at from two different sides, a fact resulting from the other fact that this unity is a term in two contrary relations, one of which points outwards, while the other points inwards.

Although in this passage Kant insists once again that a future transcendental philosophy must begin from a highest concept, we may yet take it for certain that he strove eagerly to make this highest point the beginning of a derivation which should be implicit in the point itself and have an abstract quality leading to the complete elucidation of the relations subsisting between the categories. But a complete solution of the task was denied him. With obvious regret he sees himself compelled to accept the categories

as he finds them, more or less as though they were axioms. He arranges them in accordance with the logical form of Judgments, and consequently finds that they are twelve. These twelve categories are for him so many ways in which a relation to an object can subsist.

In one passage he remarks despondently that it is unlikely that any reason can be assigned for their kind and number, a remark which surely is due to a feeling of helplessness in the face of a goal clearly seen but lying beyond his powers. On many occasions Kant refers to the transcendental philosophy which still remains to be created, again and again expressing the hope that some day it might be possible "to derive everything from one single principle".

But in spite of the pessimistic remark just quoted, Kant, after the appearance of the *Critique*, did not give up the attempt to discover an essentially analytical, immanent, and logical derivation of the categories, and all that appertains to them, from one single fundamental concept; and when he succeeds in hitting on certain aspects of the deeper truth he proclaims his discovery with particular pleasure. The first statement of this kind occurs in the *Prolegomena*; another in the second edition of the *Critique of Pure Reason*, § II, where he offers some "not unpleasing considerations" about the categories, "which may lead to important consequences with regard to the philosophic form of all rational knowledge". He even hoped for a "purely analytical part of metaphysics", which, by virtue of "its exactness and completeness might have not only a certain utility, but also a certain beauty derived from its systematic quality" (*Prolegomena*).

Here Kant was on the right road, but missed the last turning which would have led him to the goal. Our natural order, on the other hand, allows us to see how a complete solution can be found, and especially how an analytical derivation of the categories can be effected.

The categories are universal concepts belonging to different stages of the survey, and there is a certain arbitrariness in the manner in which they are selected; at the same time, however, their connection with the prime form manifests itself in the manner in which they are set out. Kant takes them in four groups of three. To each of these groups there corresponds one of the main points of view from which we can consider the prime form: Relation, Quantity, Quality, Modality. The three categories which each of the four groups contains correspond to the three subsidiary variant

forms which we derived from that prime form of relation which we called unity of opposites; these groups of three might be described very concisely as "thesis-antithesis-synthesis". It is true that all this is not worked out by Kant either exhaustively or with the greatest attainable definiteness—a defect due to his inadequate formulation of the facts; but the passage in the *Prolegomena* proves that he was following the same road as is pursued in this work.

In order to effect a transition from the wholly abstract categories to the world of sensuous phenomena, and in order to demonstrate the application of the categories in "principles", Kant analyses the form of the inner sense (time). In this process he follows the outline of the system of categories. The first result which he reaches is a "schema" of the application of the categories to sensibility. Interesting, however, as these considerations are, we must refrain from entering on them any further.

(γ) The Dialectic

"Empirical Ego" and "Object"—"Ego in Itself" and "Thing in Itself"—"Phenomenon"—Relation between "Thing in Itself" and "Object"—The Thing in Itself as Empty Liminal Concept—Transcendental Appearance. The Thing in Itself and the *Focus Imaginarius*—Ideas—Ideas as Converse Concepts. The "As If".

The Ideas of God, World, and Soul—The Supra-Individual Immanence as Reason of the Possibility of Ideas—Ultimate Reason of the Inner Conflict—Paralogisms and Antinomies—Agreement between the Kantian Dialectic and the Natural Order—Relation of the Whole of the Kantian System of Ideas to the "Natural Order".

Kant's Attitude to Relativity.

With Kant the "empirical Ego" is the counterpart of the "object". In each there is a manifoldness that is united into one, and the manifoldness is the same in each, since the manifold that is given in the outer sense is identical with that which, in the inner sense, we intuit as a modification of the mind; any other manifoldness than this does not exist. And equally there is one unity only, for unity—that of the outer sense as well as that of the object—comes from the understanding, or, more exactly, from that higher transcendental unity of apperception by virtue of which we can speak of an ego.

The only difference between empirical ego and object consists,

then, in the sense or direction of the relation between inner and outer. By virtue of this bilateral relation one multiple unity is apprehended as "empirical ego" when referred inward, and as "object" when referred outward.

If unity is taken by itself and apart from the determinate manifoldness which unfolds in space and time, it can have two meanings. If considered in the direction which leads towards the object, it is the transcendent thing in itself; if considered in that which takes us to the empirical ego, it is the transcendental ego in itself. In contrast with this thing in itself and this ego, the empirical ego and the empirical object are also known as the "phenomenon" of the ego or the thing in itself, respectively.

In a previous passage I stated that "ego in itself" and "thing in itself" were the two most extreme abstract manifestations in which the two terms of the opposition between inner and outer manifest themselves. They are, so to speak, the two extreme poles of inner and outer to which all the forms of actuality may be referred. To the ego we refer all the capacities, actions, and states of the mind in which the given manifoldness is comprehended, and as a result we arrive at the empirical ego; while to the thing in itself we refer the same manifoldness as though on the assumption that it is the result of an activity of this thing in itself. Further, we set *unity* down to it, as well as all those forms of relation which are used in the intellectual penetration of the manifold. As a result of this the manifold becomes "object".

The thing in itself is the outer pole, and the form of individual is treated as having been completely laid aside. In consequence the individual cannot attain to this pole. The progress to the thing in itself takes in the "object" in its course, and the object can be immediately approached. It is not identical with the thing in itself, but it does serve to point out the way towards it.

Retaining the meaning it bears with Kant, but employing the terminology of our own fundamental order, we might say that the object is the unity of the ego projected into the manifoldness of sense-data. The given, after all, becomes "object" only by virtue of the synthetic unity of understanding, which is identical with that of the ego.

The most universal form of this projection, or, as Kant calls it, reference outwards, is found in Kant's "Highest concept" of an "object in general", and in the twelve categories that arise through an analysis of the latter. Now the thing in itself is this absolute

object-unity, that is to say, the unity as projected outwards, without reference to the Given and its "phenomenon".

If the contrary pair of inner and outer is combined with unity-and-multiplicity and activity-passivity (or reciprocal dependence), a variant of the original opposition is formed, and in this variant the thing in itself, which, as we saw, is the outer pole, is one of the two opposed terms. This form of opposition is indissoluble. From it the concept of the thing in itself derives its inner necessity, and the concept of the "object in general", and hence the categories, derive from it an "extension beyond sensuous intuition".

This does not, however, suffice to give to the thing in itself an intuitable content. That which is given to us in sense-intuition is not, at first, one of two opposite terms, as are ego and thing and inner and outer, but, as we saw in the main analytical system, it is that "determination" which makes explicit such oppositions as those between ego and thing, and inner and outer, and others, and is amalgamated with the terms of the opposition.

Once this determination has been treated as "sensuous intuition", and as such has been referred into the ego—a process which leads to the completion of the form of individual—it is no longer possible to refer the determination to the thing in itself without destroying the form of the individual, and with it sense-intuition. Hence "for us", as individuals having sense-intuition, the concept of the thing in itself remains "empty". It cannot "posit anything positive outside the sphere of sensibility". In another passage Kant says that in the outer sense I refer the intuition to something "actual that lies outside myself"; but this actuality outside myself must not be understood, as is sometimes done, as being the thing in itself. The concept of actuality is never applied by Kant to the thing in itself. In another passage he says of the "actuality which lies outside me" that "every external perception proves immediately that there is something actual in space; or rather, it is itself the actual; and to this extent empirical realism is irrefutable" (first edition of the *Critique of Pure Reason*). At another place he says that the real is "actual in perception alone, and cannot be actual in any other manner".

Although the concept of the thing in itself may be "empty", it is not pure fiction; it is, on the other hand, a liminal concept. If we allow ourselves to apply to it the data of our sense-perception, a "transcendental appearance" results.

It is Reason which in spite of this compels us to refer our experience to this outer pole, with the aim of introducing a higher unity into this entire experience. We act *as if* there were something outside ourselves to which our sensuous experience could, to a certain degree, be validly applied. In this way we reach the realm of *fictions*.

Kant speaks of an external focus of all our experience—a "*focus imaginarius*", to which there corresponds what may be called a virtual image of experience.

The pole of the ego in myself is an immediate datum; the counter-pole, the Kantian *focus imaginarius*, we, as individuals, can never attain. We are acquainted with it only through its mirrored reflection which furnishes us with an illusion, by which, behind the surface of the mirror, a focus is supposed to exist whence all those lines of direction radiate that have already been laid down by means of the projection outwards of our experience.

The universal concepts which are referred to this outer pole are called Ideas by Kant. They are thus liminal concepts which can at best be realized asymptotically; and the unity in which they are comprehended is called systematic unity in contrast to that of the Concepts whose unity is "synthetic".

Thus we have a unity which is projected outwards and is a representation of the *focus imaginarius*; attached to it there is a system of relations. The force both of the unity and of the relations is merely "regulative" and not "constitutive", and consequently the ideas are merely rules or demands (or postulates and maxims, as Kant calls them) of reason.

This fact is sufficiently striking, and in order to describe and justify it Kant makes use of a number of different expressions. For the reader it will be immediately intelligible if, on the one hand, we recall what was said above about the thing in itself, and reflect, on the other, upon the foundations on which the concept of transcendence is based. It will be remembered that these foundations were obtained as the result of our analysis.

The whole system of relations with which Kant deals in the Dialectic very largely corresponds to that which, in the analysis of the fundamental concept, I called the "Converse". The ideas of Kant are our *converse concepts*; and the *focus imaginarius* and the whole attendant system of relations, through which we reach the "illusions", correspond to our "prime fiction of plenary reality" in its unity. Indeed, the concept of plenary reality is closely akin

to the thing in itself. It is on this that the origin and the justification of the fictional (or, as Kant calls it, hypothetical) employment of reason is based—of that “*as if*” which has been treated so exhaustively by Vaihinger. Kant here furnishes us with an exhaustive introduction into this region of the “*as if*”. The nature of the fictional employment of reason he describes as being in the first instance “economic” and “heuristic”.

Kant treats three ideas of special universality with particular attention: those of God, the world (or cosmos), and the soul. Ultimately all the three refer to the same system of phenomena, and the chief difference between them consists in their degree of universality and the stage in our survey at which they have a place.

In the *converse* of our system these three ideas appear respectively at the stage of Plenitude, at that of the world-forms, and at that of the organic individual forms. “Soul” is the converse of the “ego in itself” at the stage of the organic individual. Cosmos or World, in the Kantian sense, is the converse of the concept of world such as we formed it; and God is the converse of Plenitude as sum total or absolute unity of reality. The natural order permits us to form other “converses” of considerable scope, leading far into the region of the physical world: with Kant we find no more than hints of these.

The ideas are liminal concepts. If we remain at the standpoint of the individual forms—that is, if, instead of giving proper weight to the analytical connection between the individual form and the prime form, we treat the individual form simply and axiomatically as given, as Kant, in fact, does—then it is impossible to see a transition leading by methods of logical analysis from this point to the “ideas”. They seem to be without logical justification, and to be “transcendent” in the strict Kantian sense. On the other hand, if we go back to the supra-individual prime form of the natural order and make that the standpoint from which to consider the ideas, then, at this more primitive standpoint of the prime form, they are still “immanent”.

In fact, it is this immanence within the supra-individual stage that makes it possible to form these concepts. Ultimately, too, this immanence is the sole justification permitting reason to lead us on the road of transcendence even if we remain at the stand-

point of the individual forms; for the fundamental supra-individual relations are implicitly contained even in the individual form, and these relations are the force which compels us to adopt the "ideas".

No approach to the ideas is possible, however, for those who, like Kant, refuse to go beyond the individual forms in their unanalysed state. But, although inadequate analytically, the ideas clearly prove their inner force and indispensability, and accordingly Kant recognizes them as "regulative principles". This leads to a certain conflict within himself, a struggle in which we need see no more than the conflict between the individual form in its unanalysed state as basal and the supra-individual "postulates" of the prime form, which emerge out of it with compulsive force. In this conflict we may see the ultimate origin of all the paralogsms and antinomies relating to the ideas with which Kant presents us.

Of the *Critique of Pure Reason* the Dialectic is probably the part which has been the object of the greatest misunderstanding and controversy. This is due to the curiously irrational appearance of its contents. We have now seen that in all its main features this part of the Kantian *Critique*, like the first, fits in with the rational structure of relations as we find it outlined in the natural order, and more particularly that it is closely akin to the "Converse". This implies a far-reaching rationalization of the Kantian Dialectic; and the deeper facts on which his exposition rests now become clearly manifest.

Thus the main structure of the *Critique of Pure Reason* agrees with that of the natural order. Kant presents us with one of the many possible versions of this order; not, indeed, of the whole order, but of a considerable fragment, which, in difficult conditions, he outlines with a very true instinct and with great strictness and accuracy.

We may imagine the fundamental order as a plane circle, the centre of which is occupied by the pole of our order: a figure such as I suggested it in *Wirklichkeit, Wahrheit und Wissen* (p. 188). The *Critique of Pure Reason* might then be described as a concentric ring within this circle. It would surround the pre-individual fundamental forms, which lie nearer to the centre; forms which Kant never explained by processes of analysis, although his

axiomatic basal concepts allow him to find the requisite contact in each instance.

It is from his exceedingly sensitive, or, as one is tempted to say, intuitive, adaptation to the natural order that the works of Kant derive that scope and range which aroused the enthusiasm of contemporaries; and that in spite of the fact that the whole structure of the work rests on a vast and confusing number of axiomatic concepts which appear to be ranged side by side without rhyme or reason, while Kant applies a terminology to them that was calculated to disguise rather than to bring out their abstract meaning. Many in fact could not find their way through this confusion. What raises our admiration is the certainty with which Kant himself moves in this complicated labyrinth of *understanding*, *inner* and *outer sense*, *ego*, *category*, *object*, *thing*, *idea*, and the rest—terms that he did not discover as the result of analysis, but set up as axioms intuitively. Although he never saw immediately the order that is the support of his system of axioms, nor the deeper interconnection between its members, he succeeded, within his chosen sphere, in following strictly in the traces of the natural order and in avoiding errors and flaws.

We are thus led to ask what was Kant's attitude to the abstract question of a philosophical relativism such as I enunciated above. Kant never expressly stated a belief in it; but one of the most important results of his system is that his theory does justice alike to idealism and to realism, to empiricism and to rationalism, whereas formerly these positions were regarded as contradictory and mutually incompatible.

The Kantian antinomies, too, are due to a deeper understanding that, as between certain contradictory and "antithetical" points of view, there exist a certain relativity and claim to equal validity. A similar idea underlies the theory of the "paralogisms". An appreciation of philosophical relativism also underlies such utterances as the following: "There should be no difference whatever between saying, 'God in His wisdom has willed it so', and 'Nature in her wisdom has ordered it so'."

Another result of Kant's keen sense for philosophical relativism may be seen in his attempt to establish the element of truth in the divergent opinions of others. In one passage he remarks: "Even the absurdest opinions which obtain the applause of mankind will

always be found to contain at least an element of truth." He was convinced that the truth "was never missed completely by men of intelligence", and that attempts must be made to find the truth "even when they flatly contradict one another".

Clearly Kant was here pursuing the right path.

10. Discovery and Analysis of the Prime Form

Retrospect—The New Task before us.

We have seen how the turn towards the critical attitude was prepared by the ancient philosophers; how Descartes went to the root of the question and clearly formulated the problem of the critique of epistemology, without, however, explicitly pursuing it to the end; and how Locke and Hume succeeded in finding the key to the door that admits us to these new regions, and in getting rid of certain deep-rooted ideas which stood in the way of progress. It was Kant who was the first to explore these new regions in every direction and to make smooth the paths for his successors, thus providing a firm internal foundation for the new manner of thought.

The epistemological question and its answer were an historical necessity, essential to the liberation of the human mind from the obsession of ancient forms of thought. But as a system such a critique cannot be more than provisional—in Kant's own term, anything more than a "propædæutic". Its aim is of too narrow a scope, and it does not lead up to the true task of philosophy.

From the beginning the problem which brought us to the natural order was formulated in a more comprehensive manner. Its only assumption is the existence of that which is given immediately, together with its immanent relations; and the task that it undertakes is to furnish an orderly description of this system. In this way it hopes to throw light on those facts which allow us to speak of the opposition between a subject that imagines and an object that is imagined. This method gives us many valuable results, and it appears that the epistemological question is one among others that are easily answered from the higher standpoint.

Implicitly, if not explicitly, the Kantian critique points out the way that leads to this higher standpoint. We saw how at every

point within the Kantian system the deeper connection between the numerous axiomatic concepts of which he makes use begins to emerge, and how, while he was unable to demonstrate it explicitly, he pointed to, and groped after it, intuitively.

It was our task to demonstrate this inner connection in terms of the natural order. The first attempts in this direction had been made during Kant's life; the most important of them are associated with Hegel and Fichte. Schelling, too, must be considered in this connection because of certain peculiarities in his views, and because of the influence which he exercised on later generations.

(a) Fichte's Science of Philosophy

His Starting-Point: Kant's "Highest Point"—Two Forms of his Primary Concept—First Form: That of the Individual ("Subject-Object")—Second Form: Supra-Individual Form—Three Principles—Relation to the Prime Form.

Importance of Fichte's Version of the Prime Form—Immediate Transition from the Prime to the Individual Form—Introduction of the Concept of Ego—Introduction of the Concepts of Positing and of Divisibility—The "A" as Determination and Limitation—Solipsistic Peculiarity of the Prime Form.

Fichte's Analysis of the Prime Form—Derivation of the Categories—Barriers—The Antinomy of the "Limit"—The Way to the Supra-Individual Standpoint—Relation to Leibniz.

The Importance of Fichte—System of Axioms and Analysis—Relation to Kant.

The philosophy of Fichte is founded on that of Kant. His aim is to derive the connection between the axiomatic fundamental concepts of Kant from one supreme concept, and to effect this by processes of pure analysis; or briefly, to simplify the Kantian system of axioms. His particular aim is to substitute for the interdependent axioms one single axiom or a small group of axioms having the least possible interdependence.

All the fundamental concepts of which Kant makes use lie in the sphere of that which we call consciousness, or at least are immediately connected with it. Accordingly, Fichte makes it his task to discover the facts underlying the phenomenon of consciousness; to give "a systematic derivation of the real of the first power within consciousness".

The axioms on which he bases this attempt he finds at the point which Kant had described as the "highest". This was a "point of union". We saw that the most abstract and supreme

unity was visualized by Kant in two forms, a duality which is due to its close combination with the opposition between inner and outer. The opposition can be treated as pointing in one of two directions, and the "unity" can be referred to either one of them. If referred to the former direction, it denotes the supreme unity of consciousness—the identity of self-consciousness; if referred to the latter, it is the mirror or reflection of this unity of consciousness—the supreme version of the "object in general". Between these two directions there subsists an "identical connection".

The axiomatic starting-point selected by Fichte possesses precisely this twofold meaning which Kant attaches to his "highest point". Thence he pursues the relations step by step up to the point where Kant had accepted them as axioms. In the process of formulating his fundamental axiom, Fichte had considerable play; thus he is free to emphasize either side at will, or to begin with combining the two with each other. But this does not affect the fundamental relations which he is setting out to describe.

This more restricted choice of the standpoint is merely a practical question, determined by the width of view afforded by the different standpoints and by the distance to which it is possible to penetrate until further advance is checked by the network of intermingled relations which begin at the point selected.

In this sense Fichte made more than one attempt. The two most important forms of his starting-point are the following:—

(a) One fundamental concept in which both the sides of Kant's "highest point" are equally manifested is taken immediately from experience. It is the familiar opposition between thought and the object of thought. This opposition is simply a fact of consciousness, and in the first instance we are required to treat it solely as such. The relation between thought and the object of thought is a fundamental relation which is rooted deep in our consciousness, and is an essential characteristic of it. Fichte treats it as an indivisible whole and calls it "object-subject" or "ego-hood". "We ought not to wish to apprehend anything otherwise than in the manner in which we are able to apprehend it, namely, as consciousness plus thing, or as thing plus consciousness, or rather as neither of these two, but rather as that entity which eventually is analysed into these two—as the absolute subject-object or object-subject." Evidently this is a combination of Kant's two characteristics of the highest point, namely, "unity of consciousness" and

"concept of the object". Fichte's expression, "subject-object", has certain advantages; it describes a form of opposition which is not overburdened with everyday associations in the same degree as such concepts as *consciousness* and *thing*.—Fichte produces certain other versions of this form in which the world is apprehended. All of them have one characteristic in common—a characteristic of which we were able to give a derivation within the framework of the natural order, whereas Fichte treats it as an axiom.

(b) Another formulation of the form from which Fichte makes his beginning—one which is logically more exact, and is capable of further development by analysis—is the following:—

He begins by setting up three axiomatic principles, which, taken together, make up a definition of what we have been calling the prime form. The first of these is the principle of identity, which is akin to Kant's "highest point" (unity and identity of self-consciousness). Fichte casts it in what he imagines to be its most general form. He makes the statement that "A is A", where "A" means "anything". Hence the proposition expresses not only that "A" is determinate and given, but also that it is a simple self-identical fact ("Thesis").

The second principle is the "Law of Contradiction". Fichte enunciates it in the form of "Non-A is not A". It is equivalent to cleavage into opposites (Antithesis), and is akin to the Kantian "Concept of the object in general", for the latter, too, depends on the opposition between the non-ego and the ego which stands over against it.

The third principle is the "Law of the Ground". Fichte formulates it as "A is in part non-A; non-A is in part A". It expresses the fact of mutual interdependence, or that relation by means of which the opposite terms can be imagined as existing only in and by means of each other ("Synthesis"). He also expresses this relation by saying that A and non-A are each the limit of the other, where the limit at once divides and unites them. The limit further implies determination, and this leads him back to the first principle.

We thus see that *identical determination* is the source of an *immanent severance* into opposites and of a *reciprocal dependence*. The former emerges out of the latter; and the three form a perfect ring from which none of its members can be withdrawn.—Evidently the three principles are exactly the same as the three propositions which we had derived from the prime form, and had treated as

its subsidiary variants (compare p. 89 sq.). Consequently, between them they make up the prime form.

In the three principles of Fichte, A and non-A appear at first as having the same validity. Thus they amount to the form of the supra-individual.

Fichte was not compelled to arrive at the prime form by means of three axiomatic stages. He might have derived it immediately from experience. Indeed, the particular logical method which he adopts is not due to any inner logical necessity; on the contrary, it is obvious that it is inspired by an immediate intuitive apprehension of the prime form. It is this apprehension by which Fichte is guided in the formation of his principles, and the system which is built up of these principles is an attempt to give the most suitable description possible of the prime form.

By these means Fichte succeeded in setting up a complete abstract system of axioms. These possess the highest possible degree of universality, and have no concrete content whatever. The system is a system of relations, extremely simple and firmly founded within itself. In a purely formal sense it is capable of a different number of applications and interpretations.

The step taken by Fichte was of the greatest significance. Not only was it the first and most important development and extension of the Kantian doctrine in the sense indicated by Kant himself; it also led to the first really rigorous system of axioms that had ever been set up in the history of philosophy—a system which had the inner force necessary to enable it to throw light on the most universal forms of our consciousness and our thought.

Having thus reached the form of the supra-individual, Fichte had it in his power to proceed to an abstract analysis, and thus to discover a very great part of the natural order. The course of the development which he had undertaken led in this direction; but he missed the opportunity. He misses out all the intermediate stages, and transmutes the prime form into the form of the individual immediately; and he does so by applying his abstract axioms to the ego, thus giving them a specialized sense. The concept of the ego he takes as given, and substitutes it for the abstract "A" of his formulæ.

We need not here enter on those of his considerations which aim at substituting the ego for the "A". It is true that they lie within the framework of the natural order; but they do not amount to a

purely analytical derivation of the results which he reaches from the prime form, nor do they furnish a satisfactory explanation of the facts. Ultimately they amount to this, that the ego is taken as a particular instance of "A", and thus comes to be one among Fichte's axioms. The final result is that the following three take the place of his original and more general propositions:—

1. I am I.
2. I am not non-ego.
3. I am in part non-ego; non-ego is in part I.

These propositions are modified yet a third time by the introduction of the concept of *positing*. Ultimately this concept is implicit in the fact of reciprocal interdependence, and might have been derived by processes of analysis. Fichte, however, accepts it into his system almost as though it were an axiom. As a result, the first proposition changes into "The ego posits itself"; the process of positing Fichte calls an action. The second proposition turns into "The ego posits the non-ego"; and the third into "Within the ego I oppose to the divisible ego a divisible non-ego". The last proposition embraces the two others, and may be taken as a simple expression of Fichte's fundamental proposition.

With regard to the meaning of the concept of *divisibility* used by Fichte, it will suffice to say that it expresses the relation between two opposite terms which are posited within the ego and are related in such a manner that they determine, limit, and restrict each other. The idea of restriction contains an element of *more or less*; there is a possibility of gradation, and this concept is one which has a close connection with, and is an axiomatic extension of, the concepts of multiplicity and manifoldness. But this is not all. A certain non-rational element is due to the choice of the expression of "divisible", and no rational analysis of this is possible unless the individuals, together with their internal gradations, are first examined. To this stage Fichte did not succeed in penetrating, and in the further course of his philosophy this idea of divisibility is of no essential importance.

The new version of Fichte's original proposition which is obtained by the addition of the ego results in the main in a more exact formulation of subject-object. It is tantamount to the form of the individual, although not in its purely analytical and most general form. It is a partial version, and gives no more than a partial view. This view, however, is outlined by Fichte with such an exact

definition that it clearly reflects the natural facts, which can thus be traced back to the prime form without difficulty.

The Individual Form of the natural order contains within it the opposition between ego and non-ego. This opposition is posited through the existence of the simple given entity—through that which we call determination, and Fichte "A". Further, determination is limitation, and as such is finitude and cleavage into opposite terms. The individual "posits" itself, and thus becomes "ego"; but even if, as individual, it remains in this self-positing state, the "ego" which it posits is limited; and this limitation implies a reference to its opposite, the non-ego. It posits the ego as its Inner, and at the same time points to something that is excluded from it: this is its Outer. But this pointing does not cause it to pass beyond itself; the Outer is not realized, and does not become something distinct from the ego.

All this follows from a simple analysis of the prime form, which has been dealt with in greater detail above. It is simply a repetition of the original supra-individual prime form; only now this prime form is referred entirely to one of the two "sides", and when it is projected into this "side" (that is, into the individual) there is no appearance of division. The individual simply is the prime form taken from one side, and from one side only: it comprehends ego and non-ego within itself, and these two are inseparable. The non-ego here remains the "subjective" object—the content of imagination. To this extent the form of individual is solipsistic.

In his different descriptions of these relations, Fichte makes use of very different concepts. The opposition between ego and non-ego he describes as that between consciousness and thing, or as that between thought and being, or, again, as that between subject and object. To the opposed terms in their higher union he gives such appellations as "absolute", "absolute knowledge", "concept", and so forth; while of "being" (or thing, or non-ego) he says that it is merely the object of knowledge.

Fichte next proceeds to an analysis of his prime form. The method of the analysis follows from the nature of the prime form, and consists simply in the discovery and interpretation of the different forms of opposition which it contains. In Fichte's opinion, such

notions as those of time and space, of a material world, of organizations and individuals having different stages and gradations, of universal concepts and ideas, "are so many manifestations of the One and are quite easy to understand".

Fichte proceeds first to develop the whole table of categories as drawn up by Kant. The ego posits itself as determinate and determining: this gives us the concept of reciprocal determination. From this in turn we derive the "causality" of the non-ego and the "substantiality of the ego". The Kantian categories of reality, negation, and limitation are derived from the three original forms in which Fichte's Principles are cast. The concept of Quantity and its subordinate categories are reached by way of the concept of reciprocal limitation, a concept which is alleged to imply a partial negation of the ego, or, alternatively, of the non-ego, or, finally, a mixture of the two; in other words, the possibility of setting up a series of different degrees of mixture is held to be implied. It is here that the concept of divisibility, which was taken up into the original Principle as though it were an axiom, enters into play.

Incomplete as is this, as well as many others of Fichte's derivations, they all are in the main on the right road. In the end, however, they do not lead up to the full concepts towards which the words used in describing them seem to point; they are somewhat more general and rudimentary preliminary stages of these concepts, and thus correspond to that which in the Analytical Order I described as *germs* of these concepts. Hardly anywhere does Fichte succeed in going beyond the stage of these germs. One of the obstacles standing in the way of the progress of his analysis consists in the manner in which he formulates his version of the Prime Form. He gives to it a solipsistic turn. This is not meant to imply that he wished to inculcate solipsism as such; nevertheless, he did narrow his field of vision by the solipsistic form which he selected, and this in turn followed necessarily from the nature of his starting-point; and in practice he never succeeds in ridding himself of it, since in the course of his progress he has omitted the higher supra-individual stages, and thus cannot find a rational way towards the Transcendence. Indeed, without an *axiomatic* extension of his foundations the advance from the simple individual forms to the organic individual forms would have been impossible.

It is very remarkable that Fichte never allowed himself to succumb to the temptation of passing beyond the limits within

which he was confined and never crossed over into the region of the irrational. Yet there are many indications to show how anxious he was to resolve the antinomy of the "limit" of the ego which is the dividing-point of the bilateral relation between inner and outer.

The *limit* is equivalent to the fact of actual, definite determination, and it is this fact which leads Fichte to the concept of the "Impulse", which he holds to be the cause of the various determinations of consciousness. These are merely *given*, they are finite, and they are passively accepted. At first Fichte attempts to treat the Impulse as having its origin in the ego within which it operates, and thus to give it a place within the ego; but in the long run this solution fails to satisfy him. He also deals exhaustively with the notion that the Impulse might be looked for entirely outside the ego, and accordingly passes through a phase in which he is inclined to assume that there is some kind of supra-individual reciprocal action. This concept is reached by means of a kind of extrapolation of the inner forms of relation of the ego. This method, however, leads to an infinite series, and the satisfaction that it affords is merely formal.

Fichte himself is evidently convinced that there must be a more direct way leading to a supra-individual standpoint, whence a more comprehensive view should be possible. Unfortunately, he has himself blocked this way by omitting the intermediate analytical forms when passing from the prime form to the form of individual. He is compelled to pass back at a later point to the pure prime form, and it is only then, when he has understood its supra-individual importance, that he succeeds in obtaining an intuitive view of the higher facts, although he does not succeed in working out an exact analytical development, starting from the prime form, of the facts which he has thus intuitively apprehended.

In the absolute "determination" he sees the One, the supra-individual entity which cleaves itself into opposites. Within it there is posited a multiplicity; and thus it comes to be a "complete system of intelligences which are determined by one another"; it is a multiplicity of "egoes having the nature of monads". In these words he gives expression to the close relationship between his own view and that of Nicolas of Cusa and Leibniz.

Justice has not often been done to the inner necessity with which the whole of Fichte's system is developed. The true position of Fichte within the system of the natural order is shown by nothing

more clearly than by the manner in which his system develops almost automatically.

The importance of Fichte has hardly ever been fully appreciated. Yet, apart from the peculiar attempts made by Spinoza and Descartes, Fichte is the first to provide an exact system of axioms, and a system of universal concepts the form and content of which are derived from the axioms by analytical methods. He was the first to reveal the surprising wealth of forms of relations which can be derived purely from the inner force of the simple and axiomatic fundamental form.

It must be admitted that he did not succeed in elaborating his system of concepts down to the last detail: he shows us fragments only. These, however, he understands correctly; he grasps the manner in which they are interrelated; and from them he infers the direction in which the prime form, as well as its empirical variants, must be sought.

Thus Fichte not only completes the system of Kant, but also adds profundity to it. Whereas Kant adopts a mass of concepts and relations as though they were axioms, Fichte shows that they all can be reduced to an exceedingly simple system consisting of a very small number of axioms; and this constitutes the first successful step towards the goal that Kant had clearly perceived but had failed to reach. Thus Fichte has a right to claim, as he does, that he was the first thinker to understand Kant, and he could truly say that between his own system and the Kantian critique of Reason there was really no difference; for, in fact, what he offers us is a first, if incomplete, exposition of that system of pure reason to which Kant continually referred without succeeding in bringing it to the light himself, although ultimately the whole of the *Critique* was based on the notion of such a system.

One thinker only has carried on the development inaugurated by Fichte, pursuing it for a considerable distance farther. This was Hegel.

(b) Hegel's Logic

Preliminary Remarks.

General Description—The Starting-Point—Transformation of the Prime Form into a Methodological Law—"Concept" and "Absolute"—The Absolute as Beginning and End of the Evolution—The Initial and the Dominant Form—"Synthesis"—Disadvantages of the Method—Its Relation to the Natural Order.

Psychological Causes of Hegel's Peculiar Method—Apparent Synthesis—Development from Within—Its Application to Reality—The Movement of the Notion—"Movement" and Natural Order—Relation of the Absolute to our Prime Determination—Relativism of the "Movement of Thought"—Practical Questions.

Apart from a few obvious errors, the outline drawn by Hegel is correct in almost every point. The perspective which he selects is, on the other hand, unhappy. Nevertheless, in spite of many eccentricities in his exposition, it is the best "Order" that had been produced until his time—the most comprehensive, the best arranged, and the most firmly founded. He also approaches more closely to our own fundamental order than any thinker before him. In spite of many detours and omissions in the course of his argument, his main outlines are drawn so aptly that they must compel the admiration even of those who are not acquainted with the facts of the natural order that underlie the Hegelian system.

It is not easy to penetrate into the thought of Hegel. Apart from the difficulties which, as we saw, attach to the contents of his system, its form has an artificial and rigid quality which at first repels. Soon, however, it is felt that this artificial form is not merely arbitrary, but is the reflected image of a profounder view which is the true foundation of the system.

The system of axioms employed by Hegel goes back almost to the prime form, and the whole of his system is derived from his own fundamental axioms. In the process of this derivation, however, he uses a method which, although it leads to a large number of correct conclusions, shows everything in a strangely distorted manner. The definition of his concepts frequently is inadequate, and his terminology is odd and often ambiguous. Finally, his manner of writing is often difficult and shows no consideration for the reader, so that there are many obstacles in the way of an attempt to understand his thoughts.

These peculiarities make on most readers the impression of an extremely brilliant but empty play of words and vague ideas. Many passages there are which were obviously written carelessly. No reader, however, who succeeds in penetrating the outer diffi-

culties can escape the magic power of the light that bursts on him from every side: a large stream of life and power makes itself felt even when the sources are unknown, and it is not surprising that his doctrines have met with equally extravagant condemnation and admiration.

In order that I shall be able to give a succinct description of Hegel's work, I must first make an observation that will anticipate some of the remarks whose proper place would come at a later point.

Hegel begins from the prime form, and the prime form for him is the unity of opposites. The prime form as such he does not take in an abstract manner: from the very beginning it has a certain definite meaning. He is not, of course, unacquainted with the abstract form of opposition; but he does not make it the foundation of his analysis. The method which he follows is to transform it into a methodological principle to which he gives the name of *dialectic method*. In this it is implied that Opposition is one of the three subsidiary forms which we derived from the prime form of relation at the very beginning of the analysis. The continued application of the dialectical method causes this subsidiary form—that of opposition—to dominate the formal structure of the whole of the system. Again and again Hegel makes use of it in order to impress the prime form on the concepts which he forms. In the end this method results in the same process which we set out in the form of an analysis, with this difference, that Hegel goes by a more circuitous road and strays from the strictly rational path.

It is this recurrent search for and introduction of the prime form which yields to Hegel a series of variant versions of the prime form, a series which he treats as a Whole and as One. This One comprehends a great number of developed forms of the fundamental relation. He calls it the "Notion"; at a later stage the Notion becomes "idea", and at the last and highest stage it becomes "absolute idea" or the "absolute".

This absolute is simply the Notion in its completeness. But even at the beginning of the development of the Hegelian system the Absolute predominates. It has one perfectly general characteristic which is present everywhere—that form of relation which is manifested in the "dialectic method". This fundamental form of relation contains the germ of all the rest, and consequently it suffices to begin the development at some point chosen for its absoluteness.

and simplicity, and then to proceed by means of the dialectic method: a certain fixed course of evolution, ending in the Absolute, is in this way assured.

Accordingly Hegel begins with the Absolute by giving it the form appropriate for the dialectic method; and, after evolving it, in the course of a long series of concepts variously formulated, from the prime relation which is a part of his dialectic method, he also ends with the Absolute. There is, however, a difference between the first and the final form: the first is the prime form in its original and undeveloped stage, while the last is the most perfect possible development of the rudimentary form.

Hegel's exposition begins from, and is controlled by, one prime form of relation. This form is the unity of two opposites. Thus he was acquainted with the prime form, and fully understood its fundamental importance for the whole of his system. Hence it is all the more remarkable that Hegel did not perceive that the whole process of development from the pure fundamental form to the final stage of the absolute can be effected analytically. Hegel is under the illusion that he must proceed synthetically, and never is aware that his synthesis is only a disguised analysis.

The essence of the Hegelian synthesis consists in this, that the prime form is separated methodically from the rest of the system. Consequently it became something separated from those elements to which the method is applied. Hegel accordingly is compelled to collect his elements from case to case. Now, in the course of our formal analysis, we took certain concepts from experience and made them the objects of interpretation; and the Hegelian elements are nothing other than these concepts. The interpretations are anticipated, so to speak, and frequently they are drawn into the scope of his consideration in an absolutely non-rational manner. Once he has grasped them in this way, he establishes relations between them which are dictated by the dominant relation of the particular category. Thus at almost every stage he has to rely upon his instinct, while logical accuracy is abandoned. But Hegel possessed an unusually keen sense for the true connections subsisting between the elements with which he dealt, and his method, strange as it was, allowed him to progress very far.

Obviously the destruction of the fundamental order, followed by non-rational search and reconstruction, constitutes an enormous detour, allowing at best of an indirect advance, in the course of which all the facts appear in a distorted manner. Further, such a

system is not easily communicated to others: the Hegelian exposition presupposes a kind of sympathetic intuition in the reader.

Once a complete survey of the natural order has been obtained, the same facts are found in the main throughout the system of Hegel as had been discovered in the more direct course of the fundamental order, and the main difference consists in technique and in exactness of exposition. On the other hand, it must not be expected that the Hegelian system corresponds to our fundamental order in every part. Certain elements stand in the foreground with Hegel, while in the course of our more direct exposition they appear less important; and, on the other hand, the Hegelian exposition slurs over numerous points which in our exposition are of salient importance. The difference in method also implies a difference in terminology. It is not difficult, however, to determine which of the Hegelian terms are equivalent to ours, and this becomes all the easier if we bear in mind the distortions which necessarily follow from the peculiarity of his method.

On the other hand, those who have not mastered the fundamental order will not find it easy to grasp the facts, and the interrelations between them, with which Hegel deals, nor to follow him in that erratic course which omits so many important stages in the argument.

Hegel's dialectic method is one variant among others of the form of relation. Its peculiarity consists in the fact that it does not start from the whole (the One) in which the opposite terms manifest themselves, but makes its beginning at one of the two sides, seeking another side opposite to it, and finally constructing a unity that shall hold them together: an indirect method, and one on which the mould of the prime form is broken in pieces.

This leads us to ask what may have been the deeper psychological reason that blinded Hegel to the shorter and more direct method. We may here attempt to offer an explanation. The prime form, which is the union of two opposite terms, is an indivisible unity; but at the same time it is impossible to describe it in one word, since it invariably contains within itself a contradiction, which is the union of two opposite terms. Hence it is easy to be tempted to represent the One, in spite of the fact of its indivisibility, as divided into two opposite parts, which, taken together, make up the whole. The two alleged parts are then taken as two independent things which are logically prior to the whole, and this higher Whole

which comprehends them within itself as its parts, is built up out of them. Thus formally the indivisible One appears as the result of a synthesis, the members of which are apprehended prior to the whole.

Obviously, however, a better method is to take the One first. This is the higher and more universal entity, and the elements should then be obtained analytically, once the unity has been found. Hegel, however, has succumbed to the synthetic form, and this in spite of the fact that he had grasped tolerably clearly the importance of the simple prime form. Consequently his formal structure does not take the shape of an analysis of the form which in fact dominates his system, but of a synthesis made up of certain partial concepts supposed to be logically simpler. Before he can proceed to the synthesis, however, he is compelled to apprehend these concepts intuitively one by one as the occasion arises.

It is Hegel's correct intuition in the apprehension of these partial concepts that brings him back again and again to the right road when he has strayed away from it. It is clear that in each instance he has already obtained a full view of all the interrelated terms of that prime form which is expressed once and for all in his synthetic principle, and it is by this intuitive view that he allows himself to be guided throughout.

Indeed, his axiomatic principle of the synthesis of the Notion is nothing other than our own prime form, and this implies the law of opposition and union—of thesis, antithesis, and synthesis. This synthetic principle of development manifests itself in the Hegelian "dialectic method"; the process by which an opposite term is sought for any given term, after which a third and higher term is sought, in which the first two terms are united. Hegel calls this the *immanent dialectic* or self-unfolding of the Notion. By dialectic he means an "immanent transcendence" out of a given limited and finite something into its opposite, so that the former in a manner cancels itself and, together with its opposite, is summed up in a higher and more comprehensive concept.

The method of this self-unfolding of the Notion with Hegel is not merely one among other possible manners of setting out the facts. He also attributes to it a certain relevance as interpreting actuality, and it is supposed to correspond to a real "movement" and "self-unfolding" of the absolute. There is some justification for this method, since with Hegel prime form and method are one; only it must be observed that the term "movement" cannot, and

must not, be treated as a temporal process. It denotes something far more general. It is true that the process of which Hegel speaks may in some respects be compared to the temporal sequence of a movement; for it denotes that inner connection by means of which one term is interconnected with another in such a manner that neither can be apprehended without the other. Hence it is impossible to isolate either without positing a transition to the other, and without apprehending their higher interconnection, and this in turn implies a necessary advance along the series of logical stages in the development. It is the same kind of interconnection as that from which, in the course of the natural order, we derived the notion of "continuous" interconnection, or, again, the germ of the concept of continuity.

From our own standpoint the Hegelian view of the movement of the absolute is taken in a narrower sense, since the advance towards the final unfolding is not as unequivocally obvious as Hegel clearly thought it to be. The fact is that we have "all in one", and the method of unfolding is purely a practical question.

With Hegel the *absolute* is the beginning and the end of the logical movement. This term stands very close to our own prime determinateness in its extra-temporal and extra-spatial (or, more generally, relationless) meaning. The prime determinateness comprehends the Whole in One, and in it the prime relation is divided into opposite terms. We have already traced it through all the stages to Plenitude and plenary reality, which concepts in turn simply denote the prime determinateness in the state of complete unfolding, such as we find it when we have traced to the end all the series of relations attached to it. The prime determinateness, together with the prime relation, constituted the pole of order, and the pole from which the investigation began: plenary reality was the counter-pole at which it ended. The driving force of the whole process lay in the prime form of relation, which is the cleavage into opposite terms.

The transition from one pole to the other is laid down in its general form only; great liberty remains with regard to details. The "movement" is not compulsory, nor need the two poles be taken as point of departure and point of arrival respectively, and we have the right to allow ourselves to be guided by practical considerations in the choice of the concepts from which we make our start. All that is constant is the sum of the given and the network of various relations which penetrates and holds it together, while the form in which this network presents itself to us depends

on the standpoint which we happen to occupy at the moment. Different points of view may show us the same set of objects in different lights; in a relative sense—and in a relative sense only—each view is correct. At no point in the whole of the progress do we find an “absolute” view.

To illustrate our meaning we may take a concrete mechanical movement. Such a movement can be looked upon and described in a great variety of ways. Thus a point moving in what we call a straight line towards the centre of the earth follows an exceedingly complex path if we contemplate this movement from the moon instead of the earth. At the same time the two paths are the same, and these two different versions of this path depend on the standpoint selected. The case is similar with the movement of the absolute of which Hegel speaks. It corresponds roughly to the intellectual “movement” from the pole of order to plenary reality. Now this “movement” was simply a particular manner in which we pursued the series of relations, which were treated as definitely fixed, from a standpoint chosen from practical considerations.

Hegel was not happy in the choice of either his methods or his standpoints. If his method was to lead to the desired goal at all, it demanded an amazingly keen sense for the various interrelated facts that he desired to illuminate, whereas a purely analytic method would have placed them before him immediately and without any difficulty; but in fact Hegel possessed this sense to such an astonishing degree that he succeeded in finding his way back to the direct path again and again when in the course of his progress he had moved away obliquely from it.

The Three Stages of the Hegelian Exposition

The First Stage: Initial Concept—“Being” and “Nothing”—Their Meaning within the Method—“Becoming”—Its Meaning within the Method—Interpretation of Becoming, Being, and Nothing—Comparison with the Concept of Becoming in the Natural Order—Characterization of Hegel’s Method.

Details from Hegel’s Development of the First Stage—Becoming, Determinate Being—Determinateness, Something—Unity, Multiplicity—Continuity—Meanings of “For Itself”, “In Itself”, “Reflection”, etc.

Second Stage: “Essence”—Its Relation to the Concept of Substance of the Natural Order—“Identity”—Positive and Negative, Existence, Thing—“Ground”, etc.

Third Stage: Subject, Object, Idea—Absolute Idea—Nature—Spirit.

The course of Hegel’s argument passes through three main stages, each of which is supposed to represent a different logical manner

of apprehending the Notion. The first stage is that of "Being", or the "Notion in itself"; the second that of "Essence", or the "Notion for itself"; and the third that of the "Notion in and for itself".

I. At the first stage of his process Hegel makes use of an initial concept to which he can apply his dialectical guiding principle for the first time. In fact, this principle is equivalent to the prime form and the prime concept; Hegel, however, formally distinguishes it from the concepts which he proposes to examine. Hence he is compelled to look for some concept with which to make a beginning in order to make it the first term or side of a synthesis. Thus at the very beginning he is compelled to abandon rational processes and to enter on a search, in order that he shall be able to employ the method which shapes and moulds prime form.

The concept with which he begins is that of "pure Being" in its greatest abstractness. He takes it as an axiom that this is the most universal possible concept, and in this sense he calls pure Being "indeterminate simple Immediate". It is akin to the *Being* of the Eleatics, but as treated by Hegel it is taken in such an abstract manner as to be deprived completely of content, and is utterly unrelated to reality. Thus it becomes "Nothing". Now Hegel actually believes that he has the right to identify this absolutely empty Being with its opposite Nothing, and thus he arrives at the second member of the synthesis, namely Nothing. Its connection with the first member, Being, consists not only in the fact of their asserted identity: Nothing is also the opposite of Being.

This is the first example of the Hegelian application of the prime form in the dialectic manner, in which two opposite terms are related, and, because they are identical, form an indissoluble unity.

This peculiar and much criticized first stride of the Hegelian Logic becomes intelligible if Being and Nothing are simply treated as though they were a kind of logical counter. The fact is that at this point they are abstract and empty symbols for Hegel, used simply to denote the two opposite sides of the contradiction as such; and Hegel himself calls the relation between Being and Nothing "the opposition in its full immediacy". By identifying these two terms Hegel finally unites them into a complete unity. Thus the prime form is applied synthetically, and the manner of this process is one of the three which, at the beginning of the analysis, we described as the most primitive variants of the prime form.

The unity of Being and Nothing Hegel calls Becoming. This third concept is of a higher nature, and in fact the concept of

Becoming is well fitted to serve as an illustration of the manner in which two contrary terms can, and indeed must, be imagined as united into one. Of the opportunity thus offered Hegel makes full use.

At the same time it must not be forgotten that Being and Nothing were for Hegel mere abstract counters whose sole function it was to furnish an example of abstract Opposition as such. Hence Becoming, too, must clearly have a merely formal meaning at first, and in fact in the first instance it simply amounts to the abstract identification of opposite terms. But Hegel also allows to becoming a certain quite definite application to actuality, although not in the sense of a temporal sequence. The derivation of Time, of course, comes at a much later point: Time with Hegel, as with ourselves, is a very complex notion. The meaning introduced into his various concepts in connection with Becoming cannot be anything more than the germ of that which is generally associated with Becoming. This germinal concept, however, is not developed farther systematically, but is suffered to grow tacitly to a fuller significance in the course of the exposition.

Thus the fuller concept of Becoming is reached, in a great measure, surreptitiously. The full concept of Becoming does lie along the road followed by Hegel; but many intermediate stages remained to be passed before a rational approach to it could be effected. These are omitted by Hegel, and the gaps are filled in by a non-rational extension of the original content assigned to Becoming.

In consequence Being and Nothing, which are the elements of this concept of Becoming, turn into something quite different from their original state. They are no longer two wholly abstract symbols which could be posited as equal only by virtue of their complete abstractness, and were apprehended as forming an opposition by a kind of compulsion; and as a result they now are no longer suitable for a formal representation of the prime form.

The natural order, on the other hand, begins by taking a prime form in an absolutely abstract shape, and proceeds thence by strictly scientific processes of development and interpretation to the first general rudiment of the concept of Becoming, which later on can be developed into the concept of time. The road that has to be covered is not short, but much knowledge is acquired in the process of traversing it.

Hegel here, as almost everywhere else, is on the right road; but he frequently diverges from it, and when he does so he omits inter-

mediate stages before he returns to the main road. Thus he fails to obtain the knowledge which he would have reached had he not omitted a section of the way. He does not pass along the road in its full length, but only crosses it here and there and plucks those fruits that come readiest to his hand. It must be admitted that, having done this, he knows exactly how to utilize them for the purposes of the general plan which he has already apprehended intuitively.

I now propose to discuss some few out of the wealth of Hegel's ideas, in order to show his further progress from the first stage.

We saw that Hegel obtains the concept of Becoming as the result of a synthesis of Being and Nothing, and that in this concept the prime form has its first more determinate formulation and its first interpretation in terms of actuality. Hegel applies this prime form quite abstractly to the dialectic law that governs his whole system, and proceeds to impress this prime form upon his initial concepts which, at this stage, are void of content and contain an opposition merely formally.

Hegel next establishes a relation between the concepts of Becoming and Determinate Being, the latter being treated as the "result" of Becoming. It does not amount to the addition of anything new or in any way different from Becoming; it is merely an emphasis of the other aspect of Becoming.

Having thus reached the concept of Determinate Being, Hegel extends it by the discovery that Determinate Being is associated with Determinateness. Plainly this is an axiom. We saw in the fundamental order that determinateness is one side of the prime axiom; and we also saw that the prime determination and the prime relation are merged in each other by means of a process in which the prime determination becomes a "limit" and cleaves itself into a relation between two opposite terms so that by virtue of this bilateral relation the determination can be referred at will to either of the two sides. Figuratively we called this a projection of the determination.—By such considerations we were led at the stage of the essential forms to the germ of the concept of the individualized substance. The considerations which Hegel makes are similar. Determinateness he treats as "reflected" into Determinate Being, and the resulting form of relation he calls "intro-reflected determinate Being". This form he also calls the *existent*

entity, or *something*. This agrees very nearly with our own rudimentary concept of individualized substance.

If this something is taken "for itself" another form of opposition comes into the foreground, namely that of unity-and-multiplicity. In the fundamental order this was introduced directly into the prime form as an axiom, and this was effected by describing the prime determination as multiple determination. At the first stages we did not pay much attention to it, and it was only when we came to form the concept of the individual that we began again to consider it carefully. At that stage the form of unity-multiplicity manifests itself in an individual shape: the individual is one as opposed to the multiplicity of the Whole. The opposition between unity and multiplicity as taken by Hegel has a very similar individual cast. "For itself" the Something is "One" in opposition to "multiplicity". Hegel does not, however, succeed in clearly developing a concept agreeing with that of our "individual".

Next, after a somewhat irregular progress, Hegel arrives at the concept of the continuous and non-continuous (continuity and the discrete). The form in which he discovers them is more complex than that which we found at the stage of the individual. And here again his method does not allow him to develop his concepts to the full: he is compelled to accept much intuitively.

The further course of the Hegelian development is similar. The recurrent descriptions of "for itself", "in itself", "to reflect", and so forth evidently correspond to the recurrent forms of relation of our own fundamental order. These forms, it will be remembered, allowed us to concentrate on one aspect of a concept without reference to the other, to pass from one side to the other and back again, to contemplate the limit in which the two sides are at once severed and united, or, finally, to treat the whole system of inter-related entities as "projected" into one side only.

II. The second stage which Hegel reaches is the "Being-for-self" of the concept, which he calls "Essence". This term does not agree entirely with that which in our brief survey of the natural order we denoted by the same term. The Hegelian concept in a sense represents a preliminary stage, while our own concept is more complicated.

The Hegelian "Essence" remains closely akin to that more primitive form of relation which we found to be the first germ of

the concept of substance. "Essence is the Notion as posited Notion", and *Notion* at this stage need mean no more than the prime form; Hegel also refers to Essence as "intro-reflected Being", or, more fully, as "that kind of Being or immediacy which by virtue of its own negation becomes its own mediation, and its own self-reference". The following are the most notable points in this definition. "Immediacy" in our own terminology means one of the two sides, taken as given (or "posited") immediately. The "negation of itself" is the opposite side, taken abstractly as such. The "mediation of itself" is the reciprocal dependence of the two sides, by means of which each posits the other, so that while the first posits the second, it also posits itself indirectly through this second side, by which means it is led back to itself. This is also the meaning of "self-reference", which means the reference back to itself of the first side which is obtained through the opposing side. In this way the prime form, which finds its expression in the relation of one side to the other, is completely projected into one side only. All these are characteristics of that form of relation which we described as the germ of the concept of Substance.

Hegel immediately transforms the "self-reference" into the concept of "identity". No explanation of this will be required; this concept is the next higher stage in the development of the "immediacy of Being" which was used at the first stage.

When the second stage of the Logic is reached, the other concepts which Hegel found at the first stage unfold in a manner similar to that in which the immediacy of Being unfolds into identity. The concepts of Being and Nothing which we found in the category of Being have their counterpart in the "positive" and "negative" of the category of "Essence". In the place of Determinate Being we have Existence, and in the place of something, Thing. The forms of relation which Hegel denotes by these terms can also be traced in our own fundamental order without any loss of meaning, and much of his terminology is so apt that it can be taken over without introducing any confusion.

The concept of Identity leads on to that of Distinction. The synthesis of these two gives Hegel the concept of Ground, whence he obtains Substantiality, Causality, Reciprocal Action, and many other concepts.

The real connections between these general concepts are somewhat more complicated than would appear from the Hegelian synthesis. Hegel had no strict rule to guide him, and in consequence,

in spite of the comprehensive scope of his exposition, he frequently had to content himself with mere indications, and was everywhere compelled to call on his creative intuition to fill the gaps which his method did not allow him to fill.

III. The third stage in the Logic is the "in and for itself" of the Notion (that is, of the prime form in the process of its unfolding). It is the sum and unity of the two previous stages, Being and Essence. Hegel describes it as the "Notion in its self-identity" and as "that which is determinate in and for itself".

The Notion at this third stage Hegel considers under three headings: as "subjective" Notion, as "object", and as "idea", that is, as synthesis of subject and object.

The Hegelian Notion considered as object is closely akin to our own concept of the Universe. In it is manifested the "absolute contradiction between the absolute independence and the absolute dependence of the given manifold". This means approximately the opposition, fully discussed above, between the solipsistic isolation of the individual and the perfect harmony (or reciprocal dependence) of all individuals. Hegel thus arrives at a form of relation which he himself compares with the Leibnizian monads. The result reached in the course of this book was similar: but our more elaborate apparatus permitted us to throw a fuller light on these facts.

For Hegel the Idea as synthesis of subject and object is the "absolute unity of the (subjective) Notion and of objectivity". In one passage this concept is described in the following terms: "The Idea can be apprehended in a variety of ways: as Reason, as subject in its combination with object, as unity of the ideal and real, of finite and infinite, of body and soul, as potentiality which has its own reality in itself, or as that whose nature cannot be conceived otherwise than as existing." This does not exhaust his descriptions, and he goes on to say that all these apply to any stage of this particular concept. In particular, the idea as "absolute idea" is described as "unity of the subjective and the objective idea"; that is, it is "the concept of the idea to which the idea as such stands in the relation of object"; in other words, it is the idea which "thinks itself".

The Hegelian concept of the absolute idea is closely akin to our own concept of Plenitude, which we took to be the last stage in the unfolding of the prime form.

The "Absolute Idea in its immediacy" Hegel calls "nature", and this is the concept which he makes the foundation of his natural philosophy. This concept of Nature is remarkably similar to our own concept of plenary reality. Hegel does not retain its original purity. He passes over into that which we called the Converse, and in the process frequently enough wanders off into non-rational regions. His happy instinct deserts him in the regions of natural philosophy when he is faced by the complex concepts of experience. Where his mind fails to penetrate he uses force, and when using this kind of violence he is frequently reduced to meaningless plays on words.

Psychologically these errors of Hegel are quite intelligible. The whole structure of his system rested in the first instance on the extraordinary power of his intuition; and his one-sided standpoint—a standpoint for which the fundamental axiom of his method is characteristic—compelled him from the very beginning to trust himself to the guidance of this non-rational power. Further, the method itself had not been developed on a wide empirical basis; in the main he had somehow reached it intuitively. So long as Hegel moved among the most universal kinds of relations he had remarkable successes: but his chosen standpoint did not allow him to understand those ultimate facts on which his standpoint is in fact based, nor did he perceive the limits where he ought to have halted. He lacked a rational element which could have acted as a brake; and his method, which had been so successful at the outset, became an empty form almost of necessity as soon as the region of really complex facts was reached.

The counterpart of the concept of Nature is the Idea which has returned to itself out of its otherness. Hegel calls it "Spirit". This is the foundation of his *Philosophy of Spirit*. Spirit is very nearly the same as the consciousness of ordinary experience, but has also a number of more general characteristics which can be apprehended only at the supra-individual stage of the survey. We cannot here enter on the philosophy of Spirit, although Hegel's treatment of it is far more masterly than that of the philosophy of nature.

General Appreciation

Hegel's Psychological Attitude to the Natural Order—Difficulties of His Method.

Hegel and Relativism—"Absolute Philosophy"—Forced Application of the Formal Method.

Kant, Fichte, and Hegel—Their Relation to Their Successors.

If we outline the whole of the Hegelian system from the more favourable perspective of the natural order we shall find that almost the whole of the vast system fits easily into the natural order. The process becomes all the easier if we take into account the peculiarities which are not due to the fundamental relations but merely follow from the formal method used by Hegel, from the nature of his terminology, and from the descriptions he gave of the different directions in which the relations which dominate his system lead.

Almost everywhere it is easy to see how Hegel intuitively seizes the facts, and in so doing follows the outlines of the natural order; and how next he proceeds to fit what he has seized into his system. The system is for him the manifestation of the dominant Prime and Guiding Form. Now Hegel had correctly apprehended the prime form in itself; but in the strait-jacket of the synthetic "method" it would necessarily remain sterile if he did not escape from these restraints by intuition. It is intuition that allows him to see the whole, and by means of this comprehensive view to seize immediately those elements out of which he builds up his formal synthesis. But the process of building is difficult, and much depends on good fortune. There is no unmistakable road to every point within the network of concepts, and even at best Hegel's version of the whole is necessarily distorted. As soon, however, as the whole is fitted into the natural order the distortion vanishes and the gaps close of themselves.

Hegel's achievements in these exceedingly difficult circumstances are remarkable. The manner of his exposition may appear strange and barren: but once the matter of it is fitted into the natural order, all is clear and convincing, and many of the results reached by him obtain a fuller significance and open a wider view, once they have found their place within the natural order, than Hegel himself could have suspected.

Much valuable information would be obtained if we were to examine the Hegelian system down to its last detail in the light of our own fundamental order, a procedure which could not fail to give us many items of value in the last finish of the fundamental

order.—Once the key of the system of Hegel has been found his works will prove a mine of stimulating ideas.

Thus Hegel's system is closely allied to that of the natural order. In consequence he could not well fail to have some notion of the idea of relativism, and, indeed, he clearly states that the different philosophical systems are no more than so many different versions of the same fundamental order, which he calls "absolute philosophy". The only difference between them, apart from thoroughness of elaboration, consists in the difference of standpoint. "Such a standpoint must not be considered as a mere opinion, as the subjective manner in which an individual elects to think or to imagine, or as an error of speculation. On the contrary, speculation in its progress necessarily passes through such standpoints, and to this extent the system is completely true." The "true" (or natural) system "is the higher, and as such must contain the lower within itself".

Hegel was not able to furnish a perfectly satisfactory description of the different standpoints, and failed to express exhaustively and accurately the relations between the different systems and Absolute Philosophy. The cause of this failure lies largely in the deficiencies of his own version of this Absolute Philosophy. In spite of this, in many instances, he rightly apprehended the interrelation between systems and certain of the driving forces in the history of philosophy; on the other hand, his interpretation often is quite formal and arbitrary. Indeed, it may be said generally that he tended to exaggerate his formal method and to attach too much importance to the outer form of his exposition. This tendency frequently led him into aberrations, either when he found his advance obstructed, which often enough was due simply to the imperfections of his method; or else, more frequently still, when he attempted to deal with facts whose complexity our abstract powers are inadequate to apprehend. The deeper psychological causes of this defect were indicated above, when I was speaking of Hegel's Natural Philosophy.

We have now completed our survey of the systems of Kant, Fichte, and Hegel; we have discovered their place within the natural order, and hence their true importance. At the same time we have seen how they are dependent on each other, and hence we can now see the higher unity subsisting between them.

The scientific exactness combined with the latent scope and richness of these three thinkers has no parallel in the history of philosophy. The work of their successors is fragmentary, and, however valuable much of it is, hardly any far-reaching idea is found leading sensibly beyond their achievements.

Least of all can Schelling be compared with them. Although he was a contemporary and laboured in approximately the same sense, he never succeeded in obtaining a firm foundation. Nevertheless he exercised a great influence on the further development of philosophic thought, and accordingly his main ideas must be mentioned, however briefly.

(c) Schelling and the Philosophy of Identity

General Tendency—The Opposition between Nature and Spirit—Other Fundamental Forms—Obscurity of the Fundamental Idea—Later Versions of the Prime Form.

Appreciation of Schelling.

Most of Schelling's philosophical works show a lack of maturity, and it would appear as though Schelling himself was aware of this fact. Many of the ideas with which he operates are obscure, and throughout his life he struggles to obtain a fuller light without ever achieving his desire. The common aim of all his attempts is to find a supra-individual form of apprehension in which consciousness and the outer world shall appear as two equally valid aspects of one fundamental principle, and in which idealism and realism are different points of view having an equal justification.

At the outset Schelling followed Fichte. He looked for something "unconditioned" in human thought. He reaches a supra- and pre-individual "ego", an absolute "principle of unity" within which "thought" and "being" are comprehended, but he cannot give it a more exact formulation. The concept remains somewhat barren, and no firm connection between it and the individual ego, the universal concepts and the fundamental facts can be established.

He soon reaches the forms of opposition. He does not, however, take opposition as a pure form of relation, but renders it more concrete by setting up two axiomatic concepts in whose interrelation he sees a manifestation of the prime form. These fundamental concepts he calls *nature* and *spirit*. He establishes a rigid opposition between them and at the same time takes them as

aspects of the same entity, and therefore as "identical". "Nature is Spirit made visible: Spirit is invisible Nature."

Thus Schelling begins with two concepts which stand at the head of the argument: the opposition between them is treated as fundamental, and the concepts themselves as axioms. They are, in fact, however, far from being simple or primitive; on the contrary, they are vague and each is a whole system of highly complex relations. Schelling thus did not really go much beyond the ancient Indian view, where in a similar manner nature and spirit occupy a leading place as two members of a fundamental opposition, each of which is dependent on the other.

At a later period Schelling believed in the existence of a universal principle of life and organization—a kind of world-soul. This concept again is extremely complicated, and Schelling had not a clear grasp of it. When dealing with this concept he frequently speaks of the conscious and the unconscious in a manner very similar to that of E. von Hartmann in his philosophy of the unconscious.

Still later Schelling concentrated again on the prime opposition. He discovers two poles, each of which depends on, and at the same time postulates, the other. He calls them *Thought* and *Being*, or, again, *Ideal* and *Real*, or *Subjective* and *Objective*. This duality makes it possible to represent every fact from two standpoints; for example, to derive the Ideal from the Real, or the Real from the Ideal, a method which amounts to two manners of looking at the world each having a *relative* validity.

Next he speaks of the *indifference* of these opposites. In a sense this is the most primitive of all qualities; it is prior to opposition, and, indeed, opposition emerges from it. The "total indifference" of the Subjective and the Objective he calls "absolute reason". Once, however, that the opposites are given they reveal a fundamental law, the law of identity. The meaning of this law is the collapse of the opposites into One: this is Schelling's version of the prime form.

Now, however, that he has formulated his fundamental law with a tolerable degree of exactitude, he does not proceed to analyse it, but proceeds instead to combine it with so many subsidiary notions that he completely obstructs his view, entering more and more deeply into non-rational arguments which finally amount to little better than mysticism.

In the same process he also relinquishes his fundamental idea,

which at first he had grasped tolerably clearly. Thus in his later period he takes the oppositions as though they were quantitative, or as he calls it, as though they were a "difference". Everything actual he imagines as a mixture in which these opposite terms are compounded in different degrees. His original idea is so distorted in this process that it becomes quite valueless.

In his last period his arguments assume more and more a mystical cast. Yet in all the irrational confusion of his notions the fundamental idea of the prime form is not wholly lost. Towards the very end of his career he carefully distinguished between three manifestations of the prime form—indifference, severance into opposites, and identity. These three forms meant for Schelling much the same as what the prime determinateness, the opposition which emerges from it, and the reconciliation of the opposites in the higher unity, mean in our system. Of indifference he says: "Indifference is not the product of the opposite terms; they are not contained in it implicitly. Indifference stands apart by itself and has no connection with any opposition, and every opposition is shattered in it." Indifference "is severed into two prior terms which are equally eternal", but it exists equally in each of them, and "in each of them it is the whole". It is by virtue of this severance that the whole manifold of life and consciousness and the existence of individuals comes about. We shall best appreciate the deep significance of these ideas if we recall what was said about the prime determinateness in the analytical first part of this work.

Schelling did not advance beyond a mystic intuition of these facts: he never succeeded in further elucidating his ideas, or in drawing logical conclusions from them; still less did he succeed in carrying through an analysis.

With Fichte and Hegel the age of the great analytical systems had come to an end. They were the last of their line. The chief importance of Schelling consists in the fact that he went beyond the original individualism of Fichte and achieved a supra-individual version of the prime form; by this means he made a transcendence possible. With Hegel this idea did not enter into the foreground so much because the outer form of his system was more completely idealistic.

We saw that Fichte himself found a way to the Transcendence. He was a thinker of greater profundity and acumen than Schelling:

Schelling, on the other hand, precisely because of his greater breadth and his vague and ambiguous symbolism, has had a greater appeal than Fichte.

II. Examples Drawn from the Later Philosophical Thought of the XIXth Century

General Survey.

- (a) Schopenhauer's World as Will and Idea—Will and Idea—Inner and Outer—Active and Passive Principle—Thing in Itself.
- (b) Hartmann's "Philosophy of the Unconscious" and the "Theory of Categories"—Meaning of the "Unconscious"—Appreciation of the System—Vitalism—Theory of Categories—The Prime Category—Their Relation to Reality—Determinateness.
- (c) Höfding. The Concept of "Relation".
- (d) Herbart's Metaphysics—The "In Itself"—Unity and Multiplicity—Correlation and Contradiction—Absolute Being—Substance—The Forms of Relation.

The Kantian *Critique* had been a stimulant which liberated vast driving forces. Their first manifestation consisted in the great analytical systems of Fichte and of Hegel. But the wealth of novel ideas and complexes of ideas which were being produced caused a certain confusion, and while widely admired they were widely assailed. Thinkers worked through them again and again without succeeding in explaining every argument or in penetrating to the very foundations.

Even to-day a full understanding of Kant is being striven for. Fichte, on the other hand, has little more than historical interest for modern students. Hegel, after a brilliant rise favoured by the circumstances of the time, was subject to the gravest suspicions for a while. To-day a kind of anatomical interest is being shown in him. Thinkers feel that there is still room for discoveries, and proceed to dissect him.

It was perhaps Schelling who provided the greatest stimulus to further development—a stimulus due to the very vagueness and ambiguity of his symbolism. But no system of a greatness or profundity that would allow of a comparison with those of Hegel or Kant has been created since. We find an uncertain fluctuation, a tentative examination of the whole system of concepts; light is thrown on many aspects, and many complex facts are explained: but the one straight road of Kant, Hegel, and Fichte has not been found again.

The peculiar and multifarious movements of the XIXth Century cannot be described even in their main tendencies here. I am compelled to select a few examples. Accordingly I shall deal with Schopenhauer, Hartmann, and Herbart; in connection with the latter I shall also deal briefly with Höffding.

It is certain that Schopenhauer was much under the influence of Schelling: Hartmann follows at once Schelling and Schopenhauer.

(a) Schopenhauer's World as Will and Idea

It was said by Schelling that "Will is Being in its primitive nature, and it is to will alone that all the predicates of being can be applied, such as independence, eternity, independence of time, self-affirmation". In another passage he calls will the "spiritual substance proper". In other places he uses similar language. It would appear that this idea was the starting-point for Schopenhauer.

He begins with a pair of concepts which he calls Will and Idea. The meaning he attaches to these is far wider, however, than that usually attached to them; and it is necessary to pass back as far as the forms of Essence if we wish to apprehend these concepts in their full universality as they are used by Schopenhauer. His "will" corresponds closely with that which, at the stage of the Essence, we found to be the *germ* of the concept of will. Idea, on the other hand, is the imagination which we found at the stage of the organic forms in the course of the further development of the concept of consciousness.

There is another characteristic common to these concepts of Schopenhauer. Will and idea are a pair of concepts which constitute a variant of the prime form; with Schopenhauer they form a fundamental opposition, although it must be admitted that he does not always make his opposition sufficiently clear. It contains the opposition between inner and outer: we apprehend even ourselves in a twofold manner—as seen from without as idea (or body), and as seen from within as will. What lies without we apprehend by the same analogy. All forces, like gravity for example, are essentially of the same nature, and the whole of knowledge is really the self-contemplation of will, whose only objects are ideas.

This does not exhaust the original facts. These are, indeed, far more complicated.—To the opposition between inner and outer there is added another opposition—that between the active prin-

ciple (will) and the passive (idea) which are treated as two opposite aspects of the Essence. These aspects, as was seen in the analytical part of this work, ultimately rest on the cleavage into opposites of the determinateness which is projected into the "Essence".

For Schopenhauer the *idea* is a fact of consciousness. In its most general sense it is the simple datum or determinateness. As such it occupies a liminal position; on the one hand it expresses the passive aspect of the determinateness of the Essence—a side which is exposed to the influence of an Outer; at the same time it also points to an Inner. It is this bilateral relation that causes the Idea, which in the first instance was taken as passive, to lead us on to the opposition between subject and object. With Schopenhauer this opposition immediately becomes apparent, and it dominates his whole exposition of that which he calls Idea.

Will is the active side of things. We have seen that their determination is a reciprocal determination, each of the sides determining the other. Now in the concept of will the process of determination is referred exclusively to the Inner, and consequently determination denotes the "in-itself" of the thing, and indeed of all things. Consequently for Schopenhauer the will is the "thing in itself".

The reciprocal relation between the opposite terms Inner and Outer, or Subject and Object, again becomes immediately apparent in Will. The relation is manifested in two ways. On the one hand, the will must have an aim or object; and since the relation between it and the will is indissoluble, this aim or object *attracts to itself* certain elements of the concept of the passive and the Outer. On the other hand, Schopenhauer's view of the will shows this opposition in yet another form; since with him the will has two manifestations, appearing as subject (or act of will) and in an "objectivated" form (in the human "body").

This much must suffice as an indication of the outlines which determine the system of Schopenhauer and permit a place to be assigned to it within the natural order.—His philosophy by its treatment of the Real as "will" threw some light on a number of facts, but it did not afford much new information of a rational nature. Its great esteem is due far more to its non-rational arguments, which proved to have a widely stimulating effect.

(b) **Hartmann's Philosophy of the Unconscious and the Theory of the Categories**

No doubt Hartmann was an able philosopher; but his first work, which dealt with the *Philosophy of the Unconscious*, was really no more than a treatise full of empirical, psychological, and scientific elements. It contained many valuable ideas; but the metaphysical guiding idea, which was based on Schelling and Schopenhauer, was somewhat obscure. Hartmann expresses it rather in the form of a scientific hypothesis than in that of a philosophical theory. If it is desired succinctly to express his ideas we may say that he unites the two sides of Schopenhauer's opposition between will and idea and forms of them a higher unity which he calls the Unconscious: "In the unconscious will and idea are united into an indissoluble unity." This, however, had also been Schopenhauer's argument. With Hartmann the unconscious is a supra-individual entity, a kind of world-soul such as we found with Schelling. Schelling's profounder ideas were beyond Hartmann.

His fundamental concept Hartmann derived from the phenomena of life. He insists particularly on those mysterious mental phenomena, like instinct, which are frequently described as subconscious or unconscious. Almost half of his work on the philosophy of the unconscious is devoted to a description and discussion of these empirical facts of psychology.

The functions of the Unconscious which Hartmann reaches are exceedingly complex. It is of the nature of a substance, absolute and wise; it is perfect and at the same time it is depraved, it is one and yet it breaks up into infinite individuals, and it is mysterious, hypothetical, and non-rational to the core. This concept Hartmann cannot define exactly; he does not hesitate, however, to take a further and purely hypothetical step, and assumes that this Unconscious is not only the foundation of human, animal, and plant life, but also underlies the whole of so-called lifeless matter. The "striving of force" he equates with "will", and impresses an anthropomorphic image on the whole universe. "The real is an imagination that was willed." In this manner the Unconscious becomes the guiding principle of the whole of reality.

Hartmann refrains, however, from entering into the structure proper of this extremely complex prime being which in his hypothesis is erected into a world-principle. He is quite unable to make fully intelligible the nature of the facts by virtue of which consciousness, as well as the idea of the world and the world in its

objective existence, finally emerge. The picture which he sketches is completely non-rational.

Apart from the general notion of a higher unity between will and idea his general metaphysical argument remains far behind that of Schopenhauer and that of Schelling: at every crucial point he gives us empty words or confused notions. On the other hand, his scientific and psychological discussions are full of a surprising wealth of interesting details, and the wide sympathy which was aroused by his writings was in the main due to these discussions.

Hartmann's fundamental idea—the idea of the Unconscious—lacks the inner force which is needed if an idea is to develop farther. Nevertheless, he provided a stimulus for a large number of students, and important parts of the philosophy of vitalism are adaptations and modifications of his theory. In this philosophy the idea of Life is always taken somewhat vaguely; it amounts approximately to the sum total of all the phenomena that can be interpreted as manifestations of life in the widest sense, where the sum total does not mean an arithmetical sum, but a comprehensive unity of essentially similar manifestations. This concept has a certain similarity to our concept of the soul; on the other hand, it is somewhat more general than the common meaning of this term.

Whatever is our view of the value of Hartmann's philosophy, it must be admitted that he contributed largely in directing attention to a certain aspect of the life of the soul and in spreading philosophical methods of thought among wider circles. The psychical phenomena just mentioned will be considered in the last division of this work.

The importance of Hartmann as a philosopher is certainly due much less to his philosophy of the Unconscious than to his theory of categories. In this theory the prior place is occupied by an abstract prime form which he calls the "prime category", from which all the other universal concepts (or "categories") can be derived by a process of "differentiation". The fundamental category is absolute Relation as such. The content of the whole of being and of consciousness is thus alleged to consist of relations: "and where relations cease, there a fortiori the categories, too, cease to exist". Abstract relation is the most perfect Universal, and the universal concepts are merely "specialized or particular forms of the fundamental category". The "synthesis" is an example of such a more determinate form of a relation.

In this manner Hartmann arrives at a most important and far-reaching conclusion. It is to be regretted that having laid hold of his prime form he did not succeed in making a more exact definition and analysis of it; for, although he succeeds in establishing a number of details, he never achieves a complete survey. He appreciates the reciprocal dependence of the two interrelated sides; he speaks of the "triune" nature of the prime form, meaning by this the two opposite sides and the unity in which they are comprehended together. He realizes that forces exist by virtue of a reciprocal relation, and that by itself a force is nothing, while by means of their reciprocal relation one force posits the other, and at the same time both "posit spatiality", space for Hartmann being simply a form of relation.

In the act of relating Hartmann recognizes the fundamental logical form, while, on the other hand, the categories are simultaneously treated as formal principles of actuality—as those "formal principles which serve to connect the various components of the real with one another".

But while he resolves the whole of existence and of consciousness into Relation he also admits a second principle without which Relation cannot be imagined. This is the "Determinateness" of the Given. Determinateness is that which "determinates" the relation; it is its "foundation".

So much Hartmann clearly apprehended: beyond this he loses the thread which might have led him to his goal.

I venture to assume that my own influence played a certain part in helping Hartmann to reach his most important conclusions, since it was some six years before his theory of categories appeared that I drew his particular attention to the importance of "Determinateness" and to the reciprocal determination which results from it, pointing out that these two constitute a fundamental form prior to the whole of consciousness and the whole of existence.

It is only recently that Hartmann's theory of categories has begun to attract attention. Höffding has cast the leading notion of Hartmann in a form of his own, although it is not clear from his published works whether the impulse came from the theory of categories or whether it was an independent theory. There is in any case a close connection between Hartmann and Höffding, and for this reason I propose briefly to summarize the theory of the latter, in spite of the fact that he is a contemporary.

(c) Höffding and the Theory of "Relation"

With Höffding "Relation" invariably means reciprocal relation. Relation is the supreme category and the most universal form of apprehension. Its characteristics are "opposition, conflict, and tension", and Höffding is fully aware that in this category we are in the presence of the fundamental structure of human thought. The process of thought he compares with the use of a pair of compasses, and the clearest manifestation of the fundamental structure he finds in the relation between subject and object. Subjects can exist only in relation to objects, and the object has no meaning except in relation to a subject. This reciprocal relation of opposite terms does not, however, exhaust his fundamental structure. There is a correlative term which he calls synthesis—that is, the comprehension of the terms between which the reciprocal relation subsists so that they become a unity. He calls it "totality".

Höffding does not overlook the fact that the whole of the development of the history of philosophy, or that part of it which concerns itself with the theory of categories, tends to assign the leading position to the concept of Relation; and, indeed, this concept does lead him to a kind of relativism. He appeals to the authority of Plato for the assertion that there can be more than one valid standpoint, while at the same time there must be one superior point from which the different individual views can be explained.

We find, then, that Höffding had advanced as far as the last stage: beyond this, however, he failed to penetrate. He concentrates attention more on the individual relations than on the element which they all have in common: he realizes that they all have the one form of relation in common, but he does not trouble further to examine this fundamental form (*viz.* his prime Relation). He undertakes no analysis, and in consequence he never discovers the natural order, the existence of which he had surmised.

(d) Herbart's Metaphysics

A peculiar position in philosophy is occupied by Herbart. He finds himself unable to follow the successors of Kant, whose theories frequently contain non-rational arguments, and he attempts to achieve a clear understanding of the whole of reality by an independent investigation. His remarkable intellectual acumen preserved him from excessive aberrations from the correct road, and only

the power was lacking to pursue it to the end. At the same time he was able to throw light on a number of concepts and on the relations subsisting between them.

The whole philosophy of Herbart is dominated by a somewhat obscure idea of Substance. He fully understands that "the nature of things is not given us through the senses"; and that, while sense-perception gives us the properties of things, these properties are only a particular manner in which things manifest themselves to us in certain circumstances: "The thing itself to which these properties belong remains unknown to us."

By the *thing* Herbart understands an absolute One. Consequently the plurality of properties appears to him to be in contradiction with this unity. Wherever he looks he finds similar contradictions, and Continua of every kind seem to him to be particularly affected by them. But he also finds contradictions in the notion of the Thing, if by Thing is meant something that has more than one property; as well as in the concept of cause and of Becoming.

The difficulties in which Herbart is involved follow in the main from his peculiar notion of reality. There is yet another cause of trouble. The relations between correlated terms by their nature have two sides, and these two sides are opposites. Now in the beginning Herbart fails to appreciate their importance: he treats them as contradictions and accordingly rejects them until at a later point he realizes that this rejection cuts the ground away beneath his feet. We shall see how this reflection induces him to treat the correlated terms as forms of relation, and in this shape to readmit them into his system.

Instead of describing the Given and throwing light on the laws which govern it and on the forms of relation that prevail in it, Herbart engages in a search for the "real" which must, in his opinion, stand behind the Given. Thus at the very outset the simple and natural view is subjected to a distortion. The facts which he obtains are seen under a false angle, and the fixed point which he secures (Absolute Being or Substance) is fixed only in his imagination. By substance he means an absolute One, which really is tantamount to Nothing.

At this point Herbart realizes that it will not do to treat all properties as mere illusion through which true knowledge cannot be obtained. They cannot be rejected absolutely, for if they were, knowledge would become altogether impossible. In spite of the apparent contradictions with which they are affected, the properties

occupy so prominent a place in our experience that it must be the task of metaphysics in some way or another to make these contradictions intelligible. Thus Herbart comes to look for a complement for his non-rational concept of Absolute Being, hoping in this way to resolve the contradictions. In this process those concepts in which contradictions occur are used as "ancillary concepts" "through which thought must pass if it wishes to follow its own road, by which it proposes to regain the nature of things in their most salient points".

In order to escape from this difficult position Herbart boldly passes over a number of stages in the argument: but while he abandons logic, he is guided by a correct intuition. He effects a distinction between the rigid and absolutely simple and uniform "Being" (or Substance) and the forms of relation. At the same time he assumes a multiplicity in Being: he passes over to a kind of atomism. He assumes that there is a multiplicity of perfectly simple elements which can be neither imagined nor perceived, and he assumes that a multiple reciprocal relation subsists between these elements. He thus begins with an absolute substance, and he uses this as the unit out of which he constructs a Whole which is superior to it; a Whole which, by virtue of the multiple relation subsisting between the elements, is a synthetic unity. Thus he arrives at a fundamental system of axioms of which the elements are "Absolute Being", "Multiplicity", "Synthetic Unity", and "Multiple reciprocal Relation". This approximately corresponds to our own stage of the World-Forms, with this difference, that a superfluous concept of substance or being has been introduced by way of axiom—a concept which, in the rigid form given to it by Herbart, is valueless as an epistemological instrument, and, indeed does more harm than good. If such concepts have any validity as applied to reality, it should have been possible to derive them from first principles and to assign to them their proper significance.

We are now in a position to see how Herbart's system fits into our natural order; and we can also see how he obstructed his view by his choice of axioms. In spite of the discoveries of Kant, Fichte, and Hegel he does not succeed in finding the fundamental form of that which he calls Relations; he does not even give his own particular outline of this fundamental form. At the same time it is worth noting that he considers consciousness to be a result of his "Relations". But he lacked the analytical and the intuitive power which Kant, Fichte, and Hegel possessed, so that it was beyond

him to elucidate these facts, or generally to penetrate farther into the nature of reality.

In their day Fichte and Hegel were the only two thinkers who succeeded in advancing far in the direction pointed out by Kant. We saw how Schelling, in spite of some happy notions, effected no progress of any importance, and how Schopenhauer and Hartmann occupied themselves with certain special investigations in which their scope was greatly restricted. The structures which they raised followed the general outlines which we saw in the systems of Kant and of Fichte; but the methods which they used were in the main of a non-rational nature which did not permit them much elaboration.

The present time is rich in philosophic thought, and I now propose to examine a few representative contemporary philosophers.

12. Modern Instances

More than in any previous age modern philosophers are inspired by a sense of responsibility. The steady progress in the exactness of mathematics and of the natural sciences, the advance made by these studies, and the practical conclusions which have been drawn from the historical development of philosophy and of the sciences have compelled philosophers to realize that new methods must be sought, and have indicated the directions in which they may be found. As a result we have the numerous enquiries into the meaning of philosophical systems in general, into the position of philosophy relatively to the other sciences, into the psychological factors which influence individual thinkers in the construction of their systems, and into the laws by which the construction of these systems is controlled. As regards methodology, we find that particular attention is being paid to the careful elaboration of the axiomatic foundations and to the application of methods as practised by philosophers.

It is impossible here to give a description and an appreciation of the whole of this movement: to do this with complete justice must in any case be reserved to a later time. The examples which we are proceeding to examine have been selected somewhat at random. The arguments of Höffding, who is a contemporary, have already been examined in connection with Hartmann's theory of categories.

(a) Rehmke's "Grundwissenschaft"¹

The "Given"—Four Pairs of Opposites. Distinction between Rehmke's and our own Concept of Opposites.

The Unique and the Universal. Comparison with "Determinations and Relations"—Ultimate Terms and Prime Determinateness—The "Particularities" as Universal—Composite Universal—The Universal as One—Indefinite Structure of the Universe.

Simplicity-Unity. Multiplicity. Twofold Kind of Opposition.

Variable-Invariable—Real-Unreal. Difficulties in the Way. The Concept of the "Individual Being". Relation to the Forms of Opposition—Thing and Consciousness—Dualism—Consciousness as Relationless Having—Dualistic Difficulties. The Concept of Thing—Perception. "Action" and "Essential Heterogeneousness".

Rehmke is an acute thinker, and he attaches great importance to clear definition and strictly logical order and rationalization. Hence it is a particularly attractive study to trace out the formation of his system of axioms. Philosophy is treated by Rehmke as the "Science of the most universal properties of the Given in general". The beginning—what he calls the starting-point of the *Grundwissenschaft*—is the "simply Given". This is the most universal axiomatic concept of which he makes use.

In the region of the Given Rehmke discovers a number of universal recurrent characteristics. These he treats as axiomatic guiding forms. But although he casts them in the shape of "oppositions", his concept of opposition is different from ours. With us, the members of an opposition have a common element in which they coalesce into an identity, and each is the condition of the other. Consequently in its pure original form our opposition always is a One which includes two opposite directions within itself; and the members of this opposition are indissolubly connected with each other, the connection being of such a nature that one cannot be given without the other being actually given at the same time. With Rehmke the form of opposition is a far more complex form of relation: the unity and reciprocal dependence of the members no longer emerges immediately: they are alternatives standing side by side, and ontologically it is not the case that one is the condition of the other. Consequently the form of opposition as such is not of any particular importance and does not occupy a fundamental position in his system.

¹ Rehmke's "haben" and its derivatives are throughout rendered by "have" and its derivatives. It should be noted carefully that the "had" is not the object of any kind of possession with Rehmke.—*Translator's note.*

The following are Rehmke's guiding forms:—

Unique—Universal.

Simplicity—Unity.

Variable—Invariable.

Real—Unreal.

Among these four forms of opposition the first is the most important by reason of its ontological significance. Rehmke stresses the point that it is his "fundamental" principle, although he does not indicate any definite analytical relation between this form and the other forms of opposition. In the first instance the four forms simply stand side by side. In the further course of the investigation the relation between them becomes closer and closer, and we shall see when we come to examine an example how the structure of the system is influenced by this mutual approach.

Taking the four guiding forms in detail we may make the following remarks: The fundamental opposition between the *unique* and the *universal* has a certain affinity with the fundamental relation which we denoted by *determination-and-relation*. These were the two poles of the prime form. They are never given to us save as co-existing; but, while one is the condition of the other, this is not the case by virtue of the fact that they stand to each other in the relation of opposites. By determinateness we meant the completely Concrete apart from all relations. It is unique and non-recurrent. Relations, on the other hand, are universal and recurrent. With Rehmke the Unique is far less abstract than our Determinateness. What is unique, according to Rehmke, are not the ultimate and indissoluble determinations, but the whole complex system which constitutes an individual entity, or a "unity of action" composed of a plurality of such entities. On the other hand, all that we took to be concrete, ultimate, indefinable, and individual determinations—in short, everything that is simple and incapable of analysis—is treated by Rehmke as universal; that is, as something recurrent.

But this difference between Rehmke and ourselves is not a fundamental difference. We remember how the concept of determinateness played a peculiar part in the course of our exposition. We find determinations everywhere. Whatever is "such and such" is such only by virtue of its determinateness. At the beginning of our discussion we took the ultimate terms of sense-perception as elementary determinations. This was a provisional assumption, and in the further course of the development we were compelled to leave open the question whether in fact there are any such ultimate

determinations; the suspicion arose that the concept of ultimate entity might have no more than a relative validity. We took into consideration the possibility that there might be a point of view for every determinateness from which it might be resolved into a system of relations. If this possibility turned out to be fact, then in place of ultimate entities we would meet a new order and gradation of the individuals and the Whole. The fact that the order and gradation is such as it is, is itself a kind of determinateness that rests not on any ultimate entities but on the prime determination of plenary reality; and the latter we must accept as a non-rational fact. Although each "point" of the Whole, and each individual, is a "mirror" of the Whole, we can never exhaustively apprehend this "Whole" in the fulness of its reality. Each individual mirrors the same Whole; but in spite of this fact each individual in its concrete determinateness is, in our view, distinct from all other individuals: it is unique. From another point of view admittedly it appears as a system of relations; that is, as an entity composed of universals. In this way our own views approximate to those of Rehmke. It would take us too far, however, if we were to advance to the point where they meet.

Rehmke himself did not develop his argument up to this point. In the form in which he sets it out, however, there are difficulties which are almost insuperable unless the standpoint is radically shifted. Rehmke himself plainly takes into consideration the fact that we meet with perfectly individual and concrete determinations which, in this individual state, can be met with only in one single, definite Individual Being, or, again, in a unity of action in which a number of individual beings are united. To these entities Rehmke gives the names of "particularities", and he asserts of them that "none of them is belonging to any other unit". In spite of this, Rehmke does not treat them as unique, but as recurrent (or universal). He makes a distinction between this *particular* universal and the *identical* universal; of the latter he tells us that it can be the property not of one single unit only, but of a number of units. These two distinct universals (or recurrences), according to Rehmke, form a *composite* universal. For example, according to Rehmke, a given concrete figure of the kind which we describe as angular is composed of two universals, namely, (a) figure in general, and (b) the particularity of this one definite given angularity. Clearly, however, this particularity is indefinable in its peculiarity, and does not occur elsewhere in the actual world. Possibly one might

say of geometrical figures whose nature is determined by a definite law, that this law might recur in the world of actuality, and that to this extent this kind of law is a universal. However, taken as an ultimate entity, no particularity ever is this kind of manifestation of a geometrical law, and in the world of actuality geometrical structures cannot be demonstrated to exist. For example, no straight line in the geometrical sense exists in the world. Geometrical structures are purely logical structures: this much can be looked upon as the certain result of the mathematical and logical investigations of the last century. The "particularities" which we discovered actually manifested do not obey any law: they are indefinable and unique.

However, even if we were to follow Rehmke in treating these ultimate particularities as universal (or recurrent), a new difficulty would arise which Rehmke does not succeed in solving in a satisfactory manner. Rehmke himself stresses the fact that every universal, like "figure in general" or "circle", is one. At the same time he insists that it is recurrent, and in spite of the fact that it is given to us more than once, these multiple data are supposed to be identical with one another. The contradiction appears very clearly when Rehmke says: "Only one concept of *thing* is given . . . the concept of thing is given many times." In ordinary language the words, "Only one concept of *thing* is given", would mean, "The concept of thing is given once only". With Rehmke, apparently, it is supposed to mean something different; otherwise it would be meaningless to say, as he does in the same passage: "The concept of thing is given many times". Rehmke does not, however, succeed in making this alternative meaning clear; and if it could be made absolutely clear, the standpoint would surely undergo a considerable displacement, which would be all the more important since it would affect the foundation of the whole system.

Another difficulty, however, arises. According to Rehmke, the universal is not obtained by means of a logical construction, and least of all by any process of abstraction that lies within our choice; its meaning is ontological. The subjects of all predications which we can make of it are *given* to us, and, in the ontological sense, the world is composed of these data. In the previous example we dealt with a Something which was treated as "figure in general" and as the particularity of angularity. Clearly what applies to this concept should apply to any other concepts that can in any manner be distinguished, provided that these concepts are narrower than

the concept of "figure in general" but wider than some given, concrete, angular figure. In this way we reach the following scale: "Form in general"—"cornered figure"—"hundred-cornered"—"irregular hundred-cornered" figure, and so on, until the full concrete particularity of the individual instance is reached. All these concepts are to be treated, with Rehmke, as ontological data, out of which the individual figure is composed; for, according to Rehmke, a concept does not grow out of consciousness, but is "given" to consciousness in exactly the same manner in which a *thing* is given to consciousness. The concept is discovered by consciousness within the datum; it is not created by consciousness.

We are thus faced by the task of discovering the totality of all the intermediate links between "form in general" and the ultimate particularity. Such a process is nothing less than the elucidation of the ontological structure of the universe. The number of these intermediate links evidently is not given to us definitively or unambiguously. It is possible to set up an indefinite series of concepts, beginning with the general concept of "figure in general", and leading through concepts which grow narrower and narrower up to the particularity.

Here new difficulties arise which cannot be solved satisfactorily unless we shift the standpoint from which we look at them.

The second opposition set up by Rehmke, that between simplicity and unity, takes the simple as meaning that which is not composite, and unity as that which is composite. The former corresponds to that which we call elementary unity, or One. Rehmke's unity corresponds to what we call synthetic unity. As mentioned previously, the relation between simple and unity is not an opposition in our sense. In the form in which they are related they are not connected logically and indissolubly.

There is, however, another concept which, together with each of the two concepts used by Rehmke, forms a strict opposition in our sense of the term; at least, this is the case if we interpret Rehmke's two concepts in the sense in which we have just interpreted him. The concept referred to is that of multiplicity. We have the opposition between One (in the elementary sense) and multiplicity on the one hand, and on the other hand we have the opposition between unity (in the synthetic sense) and multiplicity. The One by itself would be meaningless except as an element within a multiplicity; and multiplicity is meaningless unless it is a multiplicity of elements each of which individually is treated by

us as One. Similarly, multiplicity is meaningless unless it is taken as forming a single (synthetic) unity, and the synthetic unity, in turn, would be meaningless unless it were a multiplicity of individual entities which are comprehended together in it. Thus one concept defines the other; and they are defined as opposites. Accordingly Rehmke's somewhat improper opposition between simple and unity can be treated as a compendious expression for two forms of opposition which are closely related to each other and are manifested within the same concept, namely, that of multiplicity. These forms of opposition are pure and primitive. At the same time we cannot decide whether the concept of the elementary One is absolute or relative. We met with the same difficulty in dealing with "ultimate entities".

The third opposition used by Rehmke is that between variable and invariable. This opposition implies the idea of change or becoming. We saw above that the concept is very complicated. If we take the opposition in Rehmke's sense as an axiomatic ontological principle of classification, very considerable difficulties arise. It would take us too far if we were to attempt to demonstrate this in detail. The readers who have followed our previous demonstrations will have no difficulty in reaching this conclusion.

Equally considerable difficulties are involved in Rehmke's fourth opposition, that between real and unreal. By unreal he means an individual Being which is not active, and also every particularity which belongs to an inactive individual Being. But, in my opinion, an individual Being which is given to us as such, and at the same time is inactive, is inconceivable, and in fact it does not occur in our experience. If it should be argued that imaginary structures, or the "images" which are supposed to denote certain things, but in fact are something different, are to be described as unreal, then the reply would be that these images, too, are the manifestation of something actual, that is, of something active, whether this principle be the material of the image, or ultimately the brain in one or other of its states. All that happens is that the actual is misinterpreted or misdescribed, and it is this kind of inaccuracy alone that permits us to describe it as unreal. But this description is not really justified. This kind of possibility cannot provide us with a comprehensive ontological principle of classification any more than such an opposition as that between correct and incorrect could be made into a fundamental ontological opposition.

These four axiomatic guiding forms are the foundation on which

Rehmke's order of the "simply given" is built up. It is this "simply given" which is the starting-point of his system. But these forms do not suffice to take him to his goal, and Rehmke is compelled considerably to extend his system of axioms. The chief extension consists in this, that he takes up a number of concepts and of relations between these concepts as though they were axioms. These he treats as absolutely given: their existence can be asserted, but cannot be reduced to more primitive concepts. Among these concepts there are "individual Being", "thing", "consciousness", and "having". Others, like "action" and "change", are implicitly contained in his guiding forms.

The concept of the "unique" is particularly important in Rehmke's system. There are two kinds unique: the Individual Being and the unity of action in which Individual Beings are united. The concept of the Individual Being is axiomatic and fundamental, and Rehmke treats it as an immediate datum. He further defines it as a unity of moment-units forming a chronological series, or, more briefly, as "the variable". He describes it as being capable of action and of being the object of action; further, it has determinations of its own and properties which accrue to it when it is in an active connection with other individual Beings. Further, it forms a chronological sequence, as was mentioned above, and in this sequence it undergoes change. In all these changes, determinations, properties, actions, and so forth, the individual Being is a "unity" by virtue of which it continues to remain an individual Being. This unity of the Individual Being exists by virtue of a "unifying determinateness".

Thus we see that all the main concepts of the four guiding forms are united together in this complex axiomatic concept of the individual Being. The individual Being is a unity, it is unique, variable, and real (which means active). On the other hand, everything that belongs to the individual Being, and is not an individual Being itself (for example, all determinations and properties), is a universal. The universal is invariable. Where change takes place, this is not a change of the universal, but of the individual Being to which the universal belongs. The universal never acts: it is the individual Being that acts. Nevertheless, the universal may be described as real, in so far as it belongs to a real individual Being.

Having thus defined the concept of the individual Being, Rehmke distinguishes between two groups of individual Beings, viz. "thing" and "consciousness". To the determinateness which is the source

of unity for the "thing" he gives the name of *place*; to that which is the source of unity for consciousness that of *subject*. What Rehmke means by subject, however, is not the same as what we mean by it. It does not mean that the subject obtains a meaning only by reference to an object; his subject simply means "the substratum (subjectum) which lies at the bottom of unity". The concept of the individual Being, more particularly, in its manifestation as consciousness with subject, is akin to the old axiomatic concept of Substance. Thing and consciousness are treated as being absolutely heterogeneous: Rehmke's theory is strictly dualistic.

This rigorous and uncompromising dualism makes it very difficult to give a clear exposition of the relation between thing and consciousness. When these two essentially heterogeneous individual Beings are united together in man (where this union is particularly close), the manner in which they are thus united controls the whole of human thought. According to Rehmke, the thing is a unity of magnitude, shape, and place. Consciousness is knowledge determined as a subject, and knowledge is "having". According to Rehmke, this "having" is supposed to be relationless. Nevertheless, Rehmke does not succeed in instancing any kind of having that does not imply the dualism of *that which has* and *that which is had*, or any kind of knowledge that does not imply the dualism of knowing and known: in each instance there is a logical severance into two concepts. Now surely a pair of terms like "having" and *that which is "had"* and knowing-known implies a relation. It is true that Rehmke denies that there is any relation to a knowing subject, and he appeals to the fact of self-consciousness, since in self-consciousness the knowing and the known are one and the same, and there can be no relation between one and the same term. This, however, is not a satisfactory solution of the question of the nature of this relationless having, which even in self-consciousness still *implies* a severance into "having" and "had", "knowing" and "known".

There is another form in which the question of the meaning of having arises. The thing is "had" by consciousness. Now this having or perception of the thing is two-sided. As Rehmke expressly tells us, the perception of the thing is identical with the thing itself. At the same time, however, it is a particularity of determinateness of consciousness, and it is of such a kind that this particularity of determinateness of consciousness corresponds and agrees in every essential detail with the determinations and properties of the

thing. The thing itself and the particularity of determinateness of consciousness are identical, and form the perception of the thing. Now here we must ask how it can be that two essentially different data, namely, the thing on the one hand, and a particularity of determinateness of consciousness on the other hand, could be united into an identity—namely, into the perception of the thing. Once the concept of an essential heterogeneousness between thing and consciousness has been established, this question cannot be treated as meaningless. Rehmke, however, offers no satisfactory answer.

This question has another side. According to Rehmke, the thing and consciousness act upon each other—that is, the one is a condition of any change taking place in the other. Rehmke accepts this as an axiomatic fact. For him change means an alteration in the “particularities” of the determination, where the determination itself remains unchanged. The individual Being is a “unity of moment-units forming a chronological series”. The “particularities” and the changes to which they are subject are conditioned by the changes in the “particularities” within another Being. This explanation does not make the meaning of change more intelligible, nor does the meaning of conditioning become clearer—that is, the question why a change within the “particularities” of the determinations of the individual Being should produce a change in other individual Beings. The concepts of change and condition can, of course, be treated as axiomatic and fundamental: but this does not really diminish the difficulty, which consists in the fact that the insistent question recurs: What justification can there be for asserting that a change in one Being is due to a change in another Being, if these two Beings have *absolutely nothing* in common? A mind striving after full understanding and order cannot pass by this enigma without demanding an answer.

It suffices to assign a somewhat lower position to the axiomatic system in order that all the difficulties shall appear in a more satisfactory light. It is not necessary to go back as far as the prime form. It suffices if we go back to the point where those universal interconnections become visible, which penetrate the whole of the Given. These interconnections unite such otherwise essentially heterogeneous terms as thing and consciousness. It would have sufficed to take perception itself as the primitive datum, in order to see that the region of the Given contains no two entities that are utterly and completely heterogeneous. Rehmke himself admits

that perception is not only *thing*, but also a *particularity of determination* of consciousness. Once this assumption is made, it becomes clear that the concept of the individual Being denotes reality, and, more precisely, is a most universal reality, while Rehmke himself, in the original form of his system, defined it as a merely relational concept.

It would take us far beyond the limits of this work to prove this in detail.

(b) Driesch's Theory of Order and of Reality

General Remarks.

Summary Description—The Original Form—The Prime Fact—Limits—"Order".

In many respects there is a similarity between the method of Driesch and that of Rehmke, and indeed the former often deliberately follows the latter. Both manifest a desire for a strictly logical order.

Driesch starts from a "prime fact", develops a theory of order from this, and transforms this into a theory of reality. His ideal he states to be a "monism of order", but at the same time he is fully aware that he has not reached this ideal: "In setting up an order, the best that we can do is to produce substitutes".

The "prime fact" itself is extremely universal, and it is formulated in such a way that some of the most important and continually recurrent characteristics of Order can be derived from it; and, indeed, the above-mentioned ideal might be brought much nearer by such a method. In practice, however, Driesch's "Order" frequently resolves itself into a description of the different manifestations of Order which can be found in the Given; he takes them as he actually finds them in the vast confusion of experience; and the inner connection between the individual manifestations remains hidden.

It must, of course, be admitted that Driesch contributes many valuable explanations and logical distinctions, and that a thorough understanding of nature is the foundation of the whole of his system. But he never penetrates to the ultimate foundation of the structure of the whole of experience: the mass of details with which the theory of order abounds consists of so many items standing side by side and having a loose superficial connection. These form

the axioms on which his system is founded—a foundation which, though wide, is non-rational.

The prime fact is expressed by Driesch in what he calls the "triune Axiom": "I have something", or, more explicitly, "I have something, and I have it consciously and am aware of the fact that I have it". This is alleged to contain implicitly the whole of his philosophy.

Clearly this axiom is a variant of our own prime form; it is equivalent to that variant of it in which it appears as individual form. The three parts of which this proposition consists have a meaning only as connected with one another, and as interrelated with one another. "I" and "something" correspond to the two opposite sides of the individual form, and they are closely akin to the usual meaning of *subject* and *object*. By means of the "have" they are united into a unity of the same kind as that which we saw in the individual form, for "have" denotes the indissoluble connection between the subject which has and the object which is had—the two terms which must be combined together before the full concept can be formed. The bare "have" by itself can be taken as a variant of the prime form of relation.

The "something" corresponds to the prime Determination; it is this which gives their content to subject and object, and it is by means of this that the opposition is severed into opposing terms. When formulated in the shape of "I have something" the prime Determination is referred to the objective side of the opposition; but can equally well be referred to the ego.

The addition of "I have it consciously and am aware of the fact that I have it", which Driesch adds on another occasion, makes his formula far more narrow and definite; in this new formulation it does not find a place within the natural order until the stage of the organic forms is reached. If the consciousness of knowledge is to mean anything more than the simple "have" it is plain that we are no longer dealing with a simple and primitive fact, since it implies the faculty of recollection, which in turn implies a higher organization of the individual.

It would seem as though Driesch himself was well aware that his description is too narrow, and as though he would like the prime fact to be taken in a somewhat less narrow sense than its formulation suggests. He refers us to a higher and supra-individual

and at the same time more primitive manner of apprehending it, a view in which the severance between subject and object has not yet taken place. This is a deeper view than that contained in his first formulation; he has not, however, made it available for the theory of order.

Driesch proceeds to complete his original proposition by the statement that the "something" which is one side of the prime fact is a well-ordered something. This is an addition to the prime form which cannot be taken otherwise than as an axiom; and in the present work the fact of order is similarly enunciated as an axiom. In this our fundamental axiom the prime relation and the prime determinateness were asserted to be indissolubly interconnected; the latter was taken specifically as *multiple* determinateness. The opposition between unity-and-multiplicity—a variant form of the prime relation—was connected in turn with multiple determinateness. The characteristic qualities of the latter were found to be order and gradation.

We saw that Driesch did not explicitly work out a formulation of the prime relation and the prime determinateness. Nor does he expressly mention the form of unity-with-multiplicity, which merely finds an indirect expression in his concept of "order". It is the order which is placed in the foreground, and the "Ordnungslehre" is an attempt to describe it in all its details.

The starting-point and the course of the development of the system have now been laid down. We can see how carefully Driesch follows in the traces of the natural order, how his system of axioms avoids the least ambiguity, and is free from empty words and complex notions. But we also see that he does not explicitly elaborate certain important fundamental relations, and we shall see at a later point that the resulting narrowness of his system obstructs his view, so that in the end he is unable to provide a satisfactory version of the inner natural order of the world of the Given.

Driesch never made the attempt to discover the structure of his fundamental axiom by means of a process of analysis. As a result, his theory of order is without certain direction. He takes the primitive facts of Order as he finds them; and in the beginning he adds concept to concept without establishing any inner connection.

(1) Theory of Order

"Object"—"Ultimate Entities":Ultimate Ordinal Entities—Primitive Symptoms of Order—Their Interpenetration.

Derivations—Nature and Soul—Degree of Manifoltness—Causality—Relation between Natural Logic and Soul-Logic.

The "something" which forms part of Driesch's original axiom is *object* in its relation to the "I" of that axiom in the most literal sense of the word: it is put over against it. But the object does not denote something existing independently of the ego, for the fact that "I have something" is an original fact and is *one*. As a result, the concept of object at the beginning of the theory of order is quite solipsistic; the metaphysical correlatives of the object are not touched until Driesch passes over to the theory of reality.

Driesch now makes a distinction between two kinds of ultimate entities. These very closely resemble our own determinations and relations. The former correspond to Driesch's "ordinal ultimate entities", and these are such simple data as *green*, *red*, and the like. On the other hand, those forms of relation which appear to him to admit of no further analysis are called by Driesch Primitive Symptoms of Order. These are of the following kind: the totality of all immediate data is "being"; now within Being I intuit "this" and "not-this", besides which Driesch finds "such", "different", "related", and other universal empirical forms of relation.

These symptoms, primitive for Driesch, are not treated as simple and incapable of analysis by me. On the contrary, most of them are exceedingly complex and incomplete relations taken from the total network of our universal concepts. For Driesch, on the other hand, they are ultimate and indissoluble entities.

He now proceeds to say that all these symptoms of order interpenetrate each other, and that for each one of them the rest constitute a complement. This is immediately intelligible once we have established the necessary reciprocal interconnection between all these "symptoms". This our fundamental order enables us to do. Driesch, on the other hand, is not in a position to make any notable contribution to the deeper understanding of these interconnected terms, for the very reason that the entities with which he is dealing seem to him to be ultimate. The self-imposed barriers can be passed only by intuition.

A second part of the theory of order is devoted to the development of such concepts as time, self, soul, and nature. Driesch begins the process of derivation from the symptoms of order. Thus in

the derivation of time he makes use of such relations as "then", "formerly", and "late". But he cannot reach really important conclusions on the nature of time by means of such a simple description; and the case is similar with *self*, *soul*, and *nature*. He has taken for granted such a vast mass of ultimate entities that the axioms within which he finds himself hemmed are too narrow to admit of any escape.

The next stage in the theory of order is the description of the soul and of nature (Logic of the Soul and Logic of Nature). His arrangement is based on the concept of the degree of manifoldness, a concept which has a certain affinity with our own concept of the gradation of Individuals, and especially to that variant of it in which emphasis is laid on the manifoldness which is contained in the gradation.

In the logic of nature Driesch discovers a number of different forms of causality, like "individual causality" or the "inorganic form of Becoming", and "total causality" or the "organic form of Becoming". The laws of mechanics are an example of the former, while the latter can be described generally as vitalism. The concept of causality by itself is sufficiently complex, and the various kinds of it which Driesch discovers contain a strong element of irrational and hypothetical associations of ideas.

Driesch's logic of the soul may be called the subjective copy of the logic of nature; he calls it the theory of the causality of that which is the object of having by a subject as such. If the words "I have" are prefixed to the elementary meanings of logic, the result, according to Driesch, consists in the elements of psychology. Since the original axiom "I have something" was never subjected to analysis, this elementary psychology does not give particularly valuable information.

(2) Theory of Reality

Appearance and Reality—Their Relation to the Prime Fact—Idealism and Realism—"Metaphysics".

Causality as Intermediate Term between Appearance and Reality—Possible Objections.

Methodological Principles for the Interpretation of Reality—Applications. "Space"—Primitive Knowledge—Dualism.

Natural Foundation of Driesch's Concept of Reality—Relation to the Natural Order.

From the formal theory of order Driesch passes over to a theory of reality. The theory of reality (also called by Driesch Meta-

physics) arises as soon as we depart from the solipsistic attitude where we are content in the "possession of something where orderly series are displayed" and proceed to apprehend the "In itself". Driesch displays great skill in justifying this transition, and describes with great accuracy the only manner in which it is possible to effect it from his standpoint. His arguments are very instructive, and we shall examine them in some detail.

Driesch begins with a new pair of concepts: "Reality" and "Appearance". These have no place in the theory of order, and the prime fact contains no prototype out of which they could develop. He accepts them as axioms, and applies them to the Something, where they cause an inner severance in which the two opposite sides of the something are revealed to us.

"Appearance" means the something as apprehended in the form of "I have something", which is the form in which it corresponds to the prime fact. This in turn necessarily includes the psychological side of experience. Reality, on the other hand, is the Something for itself and in itself and without any relation to the "I have".

It may be asked whether the prime fact admits that such a distinction should be made. Is it possible to dissociate the Something from the I have? Is there any logical justification for assuming that by the side of the Something which the subject "has" there is another "Something in itself"? If reality cannot be found outside the Something in itself, does the prime fact retain any element of reality at all?

It is at this point that Driesch is faced by the barrier which he himself erected by the too narrow formulation of the prime fact. From the standpoint of the prime fact such as Driesch postulates it there can be one view only—a view which may be described as idealistic realism, or realistic idealism; what seems to be quite impossible is a realistic Metaphysics by the side of an idealistic theory of order.

It is true that there is another standpoint from which it is easy to effect a transition from idealism to realism; but in order to reach this higher standpoint it is necessary to pass beyond the prime fact and to reach a more universal concept. But Driesch is fixed at his standpoint, and the only possibility of which he is aware is to treat the unity of the prime fact as being merely relative, and to break up the original axiom. It is an unfortunate method, in which the prime fact loses the whole of its significance;

whereas a satisfactory solution can be reached if a higher standpoint is taken up at which it is not only possible to leave the prime fact untouched, but even to make it rational. We must rise above the "I have something" and attain a supra-individual and more universal formulation, of which the prime fact is no more than a subsidiary manifestation. Once this is done, and not before, it is possible to realize that the "I have" is relative, and to assume that there is such a thing as the "in itself" of the Something. This is the only way in which the transcendence has a meaning; but once the transcendence is accepted, it also obtains a rational explanation. We may still have the right to call it Metaphysics, but it loses every flavour of dogmatism.

And, indeed, Driesch's method, by which the prime fact is broken up, is really no more than the transition to the supra-individual prime form. From the formal point of view Driesch is faced with the alternatives of passing over the self-imposed barriers by intuition and of breaking through them by force, in which latter case he assumes an irrational "in itself", which he makes the substratum of the "Something".

Thus Driesch reaches his metaphysical system in the full consciousness that he attains it only by breaking through the barriers of the prime fact. What is remarkable is that he was fully aware of his position, and that he chose the best manner of effecting the break-through. For the reader, the fact that he was forced to adopt this method is evidence of the excessive narrowness of the prime fact.

It is the fact that Being and Becoming are independent of our evolution, and of a nature alien to that of the ego, that is the main cause, according to Driesch, which compels us to pass beyond the theory of order and to enter into a system of "Metaphysics". This fact, again, compels us to complete the interpretation of the theory of order by introducing reality, and it is this that he means by *Transcendence*. The relation between appearance and reality is supposed to be approximately the same as that between effect and cause: the effect is given immediately; we must penetrate indirectly to the cause. Those readers who consider it improper to effect this leap into metaphysics off the diving-board of causality are expressly advised by Driesch to remain content with the simple theory of order.

It must be admitted that on this showing the theory of order

appears very dogmatic; and in fact Driesch never succeeds in making the transition as convincing as might be desired. His unfortunate use of such terms as *appearance* and *reality* is an additional difficulty. If the only reality is to be found in that which is the reason of appearance, while the necessary consequence of this reason is to be mere appearance as opposed to reality, then such a terminology is unusual, to say the least of it, nor is it likely that it could be applied successfully in any but a very restricted sphere. Driesch also does not sufficiently explain these concepts, and in consequence is involved in considerable formal difficulties; for once his customary exactness and intellectual acumen seem to have deserted him, and he appears hardly to be aware of the greatness of these difficulties.

In order to effect the transition from appearance to reality Driesch makes use of an axiomatic principle which he applies in a number of ways. It is formulated as follows: "The reason can never be poorer in manifoldness than the consequence"; in this shape it recalls the Cartesian axiom which enunciates the objective reality of our imaginations and states that their reason contains the fulness of being. To this Driesch adds another axiom: he assumes that such general forms of relation or primitive significances of the theory of order as "this", "not", "such", and so forth can be applied immediately to the reality which stands behind the world of appearance.

With the help of these principles he now attempts to penetrate into the transcendent reality, and does, in fact, make a number of discoveries. Thus he finds that space such as we find it must have a structure of relations corresponding to it in reality (in space in itself), and that this structure must possess a manifoldness at least equal to that of the space of appearance. The particular nature of space in itself, however, can never be determined by us. With certain restrictions we might well concur with such a result.

Among other conclusions which Driesch reaches in this manner we may mention that "knowledge" is the most universal form of relation, and that, as such, it is peculiar to reality. "The real possesses fundamental knowledge." Here, too, we can concur with Driesch, provided that by fundamental knowledge he means that primitive form of relation which occurs in the prime fact in the shape of "have": it must not, of course, mean our own highly developed knowledge of self and of something.

Driesch postulates two fundamental forms of relation: totality

and non-totality. From these he infers a dualism of reality. The significance of the latter is considerably modified by the fact that he takes fundamental knowledge to be the most universal form of the whole of reality. Thus he has no scope for a dualism of the Cartesian type.

We do not recognize the real foundation of Driesch's peculiar ontology until we call to mind once more the different relations which are manifested in this theory. When we do this we see that his view of reality is extremely complex: it combines three of the concepts between which the Natural Order establishes a distinction.

1. Driesch's distinction between appearance and reality agree in many respects with the distinction which I make between relative and plenary reality.

2. To this distinction is added another which in my terminology is expressed as the distinction between the formal well-ordered system on the one hand, and its interpretation in terms of reality on the other.

3. A third element in Driesch's concept of the real consists in the distinction between the narrow solipsistic region of experience which is apprehended and ordered by means of "interpretation", on the one hand, and the "in itself", on the other. The former is the reality of subjective consciousness; the latter is a supra-individual Whole, and is reached through transcendence.

This theory of reality, with its three elements of plenary reality, interpretation, and transcendence, is perfectly intelligible from our own point of view, and fits well into the scheme of the natural order.

The part played in Driesch's theory by these three concepts varies during the course of the transition from "order" to "reality", and in consequence the transition is very difficult. Although he attacks the problem with great ingenuity, it is impossible to solve it from his point of view without a strong element of dogmatism. But Driesch is himself aware of this; and this makes it all the easier to understand him. His attitude to Hegel and certain other philosophers is antagonistic. In view of the peculiarities of his theories this is not surprising: from Driesch's standpoint it would be almost impossible to find a higher unity in which his own attitude could be reconciled with so completely different a system as that of Hegel.

The relation between the system of Driesch and our own fundamental order might be summarized as follows: Driesch's system can be treated as a valuable component part of the natural system, and could easily be fitted into it. Once contact with the natural order is established in this manner, a rational account can be given of almost every part of it, including those parts which Driesch himself accepts as non-rational or axiomatic. Many of our own arguments are completed and improved by Driesch, and he discovers a number of new variants for our own discoveries at the stages of the individual forms, the organic forms, and the world-forms.

Yet it must be admitted that Driesch's account of the natural interconnection between his universal concepts is insufficient. In many of its most important characteristics, however, it follows the natural order; and even the details which are imported are fitted in with such delicate care that they do not greatly obstruct the view, in spite of the irregular manner in which they are introduced. He also has many interesting suggestions to make respecting the logical foundation and the formal development of philosophy.

Four points are chiefly to be noted in his system:

1. The selection of a single, simple, and definite fundamental concept from which the start is made.
2. The clear distinction made between the formal theory of order and the theory of reality.
3. The contrast between the idealism implicit in this theory of order and the critical realism implicit in the theory of reality.
4. The fact that Driesch appreciated the necessity of a separate principle in order to effect the transition from the theory of order to the theory of reality.

(c) Vaihinger and the Philosophy of the "As If"

General Tendency—Plenary Reality and Truth—Relative Truth and Fiction.
 Fiction in the Centre of Ontology—The "Absolute"—The Prime Fiction—
 "Necessary" Fiction—"Thing in Itself".
 Importance of Vaihinger's Positivism—Limitations.

I propose to give one more modern example to show the great variety of possible versions of the fundamental order. For this purpose I will briefly enter into Vaihinger's *Philosophie des Als ob*. It gives us a picture of a totally different kind from those which we found with Kant, Fichte, Hegel, Rehmke, or Driesch.

Unlike these other philosophers, Vaihinger does not look in the direction of the fundamental Unity; he looks in the opposite direction, and towards plenary Reality. His system belongs to the same category as our "Converse", and offers us a particular aspect of it. We will begin by briefly calling this aspect to mind.

Plenary Reality can be approached, but can never be reached. The concept of Plenary Reality can never be completed. It is a fiction; but it is a fiction of a peculiar nature, since its adoption cannot be avoided. In this work I have called it the prime fiction.

At the same time this plenary reality is equivalent to the truth. Truth in the objective sense is confined to plenary reality, and this we can never apprehend as such. We can form provisional concepts of certain interconnected facts which are revealed to us by the imperfect instruments of our senses, and we can form these concepts in such a way that their use within certain limits does not produce any contradiction with the rest of our experience. If in each instance we are careful to see that we do not overstep the limits within which these concepts apply we shall at least obtain a relative truth, and if we do so we shall slowly improve the adaptation of the concepts to experience and extend the sphere of their validity. Thus we can approach Plenary Reality, without at the same time ever reaching it.

We are compelled to rely on such merely relative concepts if we wish to find a way through the world of experience with the means at our disposal; and if we do not make use of these means the confusion becomes altogether baffling. We have a chance of seizing exhaustively only the most universal characteristics, and we do this by means of the universal concepts; all our narrower concepts are relative, and they are all the more relative the more exhaustively they are intended to grasp the particular peculiarity of the given manifold. This is true of such concepts as *plant*, *animal*, *bird*, *reuter*, and *air*. As soon as we attempt to define these concepts with any degree of accuracy we are made aware of the inadequacy of our powers of apprehension; and even more general concepts like *liquid*, *mass*, and *force* are at least partially relative. On the other hand, if we take certain absolutely simple elements out of the mass of our intuition (like *point*, *line*, or *atom*), then, while it is possible to define them exactly, it simultaneously becomes impossible to reach them by intuition otherwise than approximately. They are

substitutes which are put in the place of the plenary reality which we are incapable of grasping.

The results of this relatively valid apprehension are called *truths*. Such truths, however, are merely relative, and if we remember that the substratum on which they are erected is plenary reality, we see that they are either illusions or fictions—that is, approximations constructed with a practical end. Thus there is a certain justification for Vaihinger's apparent paradox to the effect that truth is the most adequate illusion.

If we direct attention to plenary reality we find that, relatively to it, all the structures of concepts which we erect are merely provisional, and that we must be ready to complete and to correct them at any moment. They are makeshift instruments intended to guide us through the confusion of the world of experience, and to extract from the Given those relations which most nearly concern us. Of these structures many are conscious fictions, while others are taken for truths, and are not discovered until we scrutinize the real nature of things.

All these ideas follow from the fundamental order. During the discussion of the idea of Plenary Reality they were developed in diverse directions, and I have dealt with them in some detail in *Das Vollwirkliche und das Als ob*. Somewhat similar arguments are also found with Kant.

Now these are the arguments which stand in the forefront of Vaihinger's *Philosophie des Als ob* and form the centre of the whole of his view of the nature of reality.

Vaihinger shows in full detail the importance of fiction in every sphere of science and life, and in doing so he rightly insists on the example of Kant. The Absolute, he says, is "the highest and ultimate fiction"; and his idea of the Absolute is closely akin to our own idea of Plenitude and Plenary Reality; but he admits certain non-rational elements. The Absolute for Vaihinger is an extension of the Thing in itself; it is "the mathematical infinite in metaphysical garb". The Absolute also contains the opposition which is manifested, for example, in the antithesis of subject and object—an antithesis which is the source of all the independent "subjects" and "objects" which are currently posited. To this unattainable Absolute Vaihinger gives the name of the "prime fiction, from which all other fictions ultimately depend". This dependence is particularly relevant to concepts of the same general

form as *subject* and *object*, of which the Absolute is the substratum.

Thus Vaihinger's theory largely agrees with our own view of Plenary Reality. All that we can *fully* grasp is relative, and if we go beyond the relative and postulate an Absolute as its substratum we enter the region of fiction. Fictions, however, with Vaihinger are no arbitrary figments; by fictions he does not mean structures that were formed in the full knowledge of their fictitious nature. There is another class, that of the "necessary fictions"; and besides these there stands the class of hidden fictions. The most important of the former is the concept of the "thing in itself"; to this may be added those universal concepts which are generally called categories.

The deeper meaning and the epistemological and ontological importance of Vaihinger's ideas becomes more apparent if attention is bestowed on this part of his system. The philosophy of the "As if" goes much farther than some of its critics suppose, who see in it no more than an orderly enumeration and analysis of the "theoretical, practical, and religious fictions of mankind". It is, in fact, a true philosophy of the world—an idealistic positivism, as its author calls it. It is a point of view which also gives us an important insight into the biological theory of epistemology and into pragmatism. In this view the logical functions are first and foremost "organically adequate processes".

With such views we are fully in agreement. It is quite compatible with our own fundamental view that all the universal concepts have the same prime form in common and can be derived from it. They are susceptible of a number of different transformations, and all of them are so many different variants of the prime form. We are free to choose them with a view to the adequacy with which they fulfil their functions; all of them, however, are manifestations of one of the primary functions of the faculty of thought.

Vaihinger's philosophy of the "as if" evidently stands very close to the positivist and the idealistic points of view; some play, however, is also left to realistic theories. For this reason his views have proved particularly popular among lawyers and scientists, by whom conscious and unconscious fictions are so freely employed. To obtain knowledge of the facts with which Vaihinger deals is important, not only for theoretical epistemology, but also for the theory of scientific arrangement and classification.

On the other hand, we must not forget the natural limits of

Vaihinger's philosophy. He concentrates most of his attention upon plenary reality; but if contact with a higher unity is to be effected, it must be sought in the opposite direction. In consequence, Vaihinger does not elucidate the inner necessity and the completeness of his view, nor the connection between it and the fundamental structure of human thought, as fully as can be done from a higher standpoint. In this respect Kant was placed in a happier position through the wider foundation of his own theory of the "as if".

For the purposes of this work, what is particularly important in Vaihinger's system is the fact that it fits completely and without contradiction into our own fundamental system.

(d) Realistic Systems

Naïve and Critical Realism—The Substratum—Questions of Standpoint—The Concept of Reality—"Belief" in Reality.

Space, Time, and Matter—Realism and Solipsism—Choice of Standpoint—Importance of the Standpoint of Naïve Realism—Relation to Idealistic Views.

The Standpoint of the Prime Form.

At all times there have been philosophies in which the subjective side of experience has been somewhat neglected. Such philosophies treat the objects of perception as lying outside the percipient entity, and suppose them to be in reality such as we perceive them to be by sight or feeling (Naïve Realism); or else they take into account the peculiarities of sense-perception and thought only to the degree which is demanded by scientific knowledge, admitting only those assumptions which appear essential for the understanding of the laws of nature (Critical Realism).

The view that objects have an existence apart from our sense-perception has a part in all realistic systems. This existence is mostly supposed to be independent of our perception and our thought, and of all conscious events generally. That there is a *relative* independence follows immediately from our analysis of the concept of substance; it emerges with especial clearness at the stage of the organic forms; but the fact of this relativity is either overlooked or neglected by most realists.

This idea of the independence of objects generally leads to the introduction of an irrational concept of substance into realistic systems. The notion of substance itself is closely akin to that of

independence. In critical realism substance is the actual substratum of appearances, and the supporters of this view consider it as an essential without which their system becomes impossible. It is taken as a necessity of thought, and at the same time as independent, but, nevertheless, it eludes comprehension.

It turns out, however, that it is superfluous to posit an independent and transcendent substratum for appearance. Substance and the independence of substance are relative, and the imaginary need to posit a substratum arises through a misguided process by which these relative entities are made absolute.

Apart from this process—a process which merely obstructs a clear view of the facts—we shall find that realism has nearly the same meaning for us as it had for Kant. The restricted realism in all its different manifestations fits immediately into our fundamental order, and the choice among the different possible views is merely a practical question which has to be answered from case to case.

A naïve realism dominates us from earliest youth. Even when later years have brought us to the critical stage, where we clearly realize that our perceptions are partly dependent on subjective conditions, and that different results follow from different pre-suppositions, we cannot entirely cast it off. A more sophisticated manner of thought presents us with logical considerations, and science gives us plain proof that what lies outside us is not sound and colour, but waves of different kinds: but while we admit the proof, we are not really convinced. The questions at issue here are questions of standpoints, and these in turn are practical questions; and for practical life naïve realism is almost invariably the most adequate adaptation of thought to the given facts.

The science of physics can demonstrate that the outer cause of the sensation of hearing is absolutely different from the sensation itself. The vibrations which cause the sensation of sound can be rendered perceptible to sight and to feeling, and it is possible to demonstrate the connection that exists between them and the event of hearing. We shall not attempt to refute such a demonstration, especially when we see that in some respects our eyes and our sense of feeling are more reliable than our ears. On the other hand, if we are compelled to deny objectivity to sight and to feeling as well as to hearing, the physical proof will begin to appear less convincing.

Next we shall call to mind that apart from our senses we have no means of reaching the "objects", and we shall see that science shows us that all these senses are "subjective", and that all that we apprehend through them differs at least as much from the "outer" object as does the sensation of hearing from a mass of air in a state of vibration. Once we have reached this point we lose all means of telling what really is outside us. The actuality outside us is absolutely unimaginable, and we have no means of penetrating to the things that lie beyond our perception.

As a result, there is really no meaning in effecting a strict distinction between the "things" and our perceptions of them. That which we perceive is as we perceive it, and this is the sole reality of which we are capable. Thus it would appear that naïve realism is justified. Perception shows us things as they really are, and anything that we assume to stand "behind" sense-perception is important solely as a fiction which proves useful in introducing order into the world of our perceptions. Such a fiction may be valuable and even indispensable; but at the same time it is never more than a fiction.

Our ideas of the atoms and of the structure of atoms, of their motion, and of the ether and its vibrations, are fictions of this kind. The vibrations of sound also belong to this class, in so far as we take them to be the true inwardness of the world of sound.

In this way a new concept of reality is reached. Here realism has a positivistic and more carefully elaborated form. To a certain extent it supports naïve realism. The real is our world of perception, and what we assume as lying behind it is fiction. In practice this is the only view of "reality" which can be carried through consistently. Its opposite is a purely formalistic, metaphysical, and transcendent belief in a kind of reality that can never be reached and lies beyond the scope of our perception.

The kind of realism which treats our sense-data as reality might equally well be described as *idealism*. In a measure it is simply a question of words. We may agree to denote by reality the admittedly fictitious thing in itself which is supposed to lie behind our perceptions. If this is done, every *sensible*—in other words, the whole world of appearance—is apprehended as something different from this reality: it is subjective, and no longer objective. But this is not yet the end of our play with the notion of reality.

For example, critical realism invents a third version of reality which stands midway between the two already mentioned. On the

strength of scientific considerations, the properties which are perceived by the senses are asserted not to inhere in the things: what reality they possess is of a subjective and idealistic kind; while more general relations, like time, space, and a third entity which is imagined as given in time and space (*matter, mass*, or something of that kind), is treated as part of the world in itself. Sometimes a particularly subtle distinction is made: the world in itself is treated as the true *reality*, and the world of subjective appearance as the world of the *actual*. Spatial and temporal determinations are axiomatically ascribed to the real world, and their properties and the interconnections between them are selected in such a manner that with their aid a simple, strict, and mathematically exact description of the world is possible.

Clearly these concepts and these axioms can have only one justification: they must be a particularly adequate means for describing the events of the world; and even their adequacy is no evidence for anything more than that these structures serve to extract from the mass of facts those which serve a particular purpose. If the point of view were changed, the facts might assume a different shape. For many students of nature such merely practical structures become absolute world-views through force of custom, and they come to be looked at as the only possible method of mathematical and physical thought. Careful thinkers—for example, Külpe and Messer—if they go so far as to adopt the theory of critical realism, confine themselves to speaking of a “belief” in the reality of the world in itself.

When tracing the development of the notion of *Transcendence*, we saw that there is a deeper reason for this belief. If this transcendence is to be rendered possible in rational connection with our experience, we must take up a higher and supra-individual standpoint. We were able to do this by means of the prime form, for we assumed that this form is valid in the whole of the sphere of possible cognition. On the other hand, so long as the standpoint of the individual forms is occupied, it is impossible to get rid of the fetters of dogmatism. In that case two dogmatic views are always possible which appear to be in conflict and yet in the end always coalesce into one, since they have one root in common. This will be seen more clearly in the sequel.

In our scientific age critical realism is probably the most widespread of all philosophical systems. It takes space, time, and Something (e.g. matter) as original data of the world of reality. Now it can be demonstrated that without rational Transcendence, space, time, and matter, as well as all other general relations of the empirical world, are subjective in exactly the same manner as sounds and colours; in other words, that they contain nothing beyond what our senses can reach; and that behind the perception of our senses there is no space, or time, or matter in itself. Whether such a view is to be described as solipsism or empiricism or positivism depends entirely on the idea of reality with which we begin, and on the general standpoint from which we treat these questions. If we take up the standpoint of the "world-forms", we shall find it easy to adopt critical realism. From the standpoint of the individual forms we shall find that there is some justification for solipsism; and if we rise above the individual forms and take up the position of the Fundamental Forms, all these questions become insignificant. Thus we understand the relation between these different standpoints, and we learn that the significance of each is merely relative. Hence the choice of a standpoint is seen to be no more than a practical question.—We also see how a transcendence can be effected from the individual form which, in itself, is solipsistic.

We saw that an analysis of the prime form which is immanent in our experience suffices to give us the means of approach to two kinds of apprehension of the All—the pre-individual and the trans-individual. At the same time we find that the individual form is a variant of the more universal prime form. Without passing beyond the individual form, or positing an opposite to it, but simply by an immanent analysis, we are led to a discovery of the facts which make it possible to speak of a transcendence and of the "in itself" of the All. The result is not a completely independent and absolute entity standing outside ourselves and forming an opposite to the subject: what we reach is a totality which comprehends the subject within itself. It is just because this totality is a unity that it mirrors itself in each individual. This mirroring manifests itself in our perception in the form of an opposition between subject and object. This is the resolution of solipsism: the word ceases to have a meaning. In this way we reach an exhaustive and immanent solution of all the questions connected with the problem of reality.

Once this has been realized we see that the question of the best

possible order of the complex of perception and experience is a merely practical question. From this point of view it is clear that for everyday life there can be no better view than that of robust and primitive realism, which in its essence amounts to taking the world at any one moment as it actually meets us; attempts are made to introduce order only in so far as seems necessary for the realization of our immediate practical ends.

But we are not compelled to take up such a standpoint. We are free to displace the centre of gravity of each separate ontological view. Each such displacement will give us a different picture of reality. Thus our method leads us, not to one definite new view, but to a number of points of view which give us so many different aspects of the same facts.

These standpoints are not incompatible with one another. Indeed, they make it easier to obtain a view of the whole, since they allow us to view it from every side and to examine the different details at close or at far range, whichever may be the more suitable.

We are free to select any standpoint that we wish, and each one enables us to give a correct portrait of the facts. In itself no one standpoint is right or wrong, and we can exchange one for the other as we choose; for the choice of the standpoint will always be a purely practical question. On the other hand, the relation between the different standpoints also remains the same, and the views which the different standpoints enable us to obtain are related to one another by a fixed rule. What we see is always the same Whole, but the sides from which we see it differ.

What may be called primitive, natural, and unsophisticated realism shows us the facts of the universe, so to speak, at close range. It is close to the *surface* of reality. If we move away from the surface a new picture presents itself.—It does not follow that either picture is wrong: each is relatively right. What has happened is that as we move away the field of vision is enlarged, the details become less important, and the main characteristics grow more salient.

In naïve realism sense-data are referred immediately to a non-ego; if they are grouped together and form a kind of united entity, we call them a *thing*. At this point, however, the question of the relation between ego and non-ego, and whether there is or is not a thing in itself, passes into the background. We see, hear, or feel "something": this leads us to speak of "objects" and "things": and all that we mean to denote by this is that which perception

presents to us in the shape of a spatial-temporal-sensuous complex. In the first instance we look outwards. But at the same time all our sensations are also directed inwards, and a connection subsists between them all. If we concentrate our attention on this connection, we arrive at the concept of the ego; and as soon as this concept occupies the foreground our original attitude to things undergoes a change. The inner cleavage—the inner opposition within all our sensations—now emerges.

As soon as we become aware of this inner opposition we reach the question of the “in-itself” of the thing. A new standpoint is taken up where we are more distant from the “things” than we had been before. Logically, this amounts to a more abstract point of view.

The reference to the thing is as necessary and as primitive a fact as the reference to the ego. When perception presents us with the ego, the latter is no nearer to us immediately than is the non-ego; indeed, at the original realistic point of view the reference to the non-ego is a good deal more immediate. On the other hand, as soon as we take up a more detached standpoint with regard to “things”, the question of the ego and the “in-itself” begins to have a meaning. This meaning, again, depends entirely on the standpoint selected. And the standpoint is capable of still further change.

The farther we move back in the direction towards the ego, the nearer do we approach to the idealistic manner of looking at the universe. In this direction the point of view that is farthest removed from reality in the realistic sense is pure solipsism.

All the standpoints that can be taken up in the regress towards idealism contain an element of realism, and they are frequently described as realism, each being given a different epithet to distinguish it. In any case, it is impossible to escape the fact that sense-perceptions as such are real, and that they are the ultimate units out of which knowledge is built up.

We are free in the selection of our standpoint, and we can change it as the needs of the case demand. Critical realism, for example, is still the appropriate point of view for physics. It is still the best means of obtaining a clear survey, or giving a simple exposition, of the grand outlines of the events of nature. A time may come when this standpoint will no longer be a matter of importance to the science of physics, and there are indications to show that this time is not so very distant. When this time comes it will be necessary to shift the point of view in one or the other

direction. Practical life, on the other hand, is not so much concerned to understand general laws as to seize the innumerable details that confront us, and here primitive realism is in place. This realism is correct, and it is true; but it gives a version of the deeper laws which becomes more and more false the more distant our standpoint is from the facts which are governed by these laws. Accordingly, if we wish to penetrate into the depths, it is not wrong theoretically to insist on this standpoint; but it is impractical. What would be wrong would be to consider it the only valid standpoint for all questions.

We have confined ourselves to the idealistic line of regress. This, however, is not the only possible line. Another dimension is available to us. In this dimension the most comprehensive and the most far-focused point of view is that of the prime form. This point of view is suitable only for the philosopher, and even the philosopher will occupy it only when he desires to establish the relativism of all possible standpoints, to discover the connections subsisting between them, and to find the point from which a particular region can best be surveyed.

Of all standpoints that of the prime form is the one from which all the main outlines and characteristics of reality can best be surveyed. The standpoint of naïve realism is the one from which the ultimate details of experience can best be apprehended. Between them lies the whole sum of the world-views with which we have become acquainted in the course of this work.

THE DEVELOPMENT OF PHILOSOPHICAL SYSTEMS

1. The Growth of Knowledge

Retrospect—The Different Systems Complement One Another—Destruction of World-Views—Causes—Limits of Knowledge—Unanswered Questions of "Multiple Determinateness"—Beyond the Barriers—Non-Rational Methods—Relation to the Sciences—Meaning of the Limits.—Future Development—Superman—Human Spirit as Member of an Infinite Series.

In the course of our historical inquiries we had a clear view of the common fundamental idea which has guided thinkers from the earliest times to the present day. The driving forces of this process emerged more and more clearly; and it became plain that the common end of all philosophers was to discover the most perfect expression of this fundamental thought. Consciously or unconsciously, the later thinkers based themselves on those who had gone before. The whole structure of human experience was subjected to a slow but thorough scrutiny—a labour in which the individual thinker frequently did not see that, in common with all his fellows, he was merely helping to fashion one pattern that permeates the whole structure. This pattern has one fundamental theme; it is manifested in every part, and it leads from each point to every other point by an inner necessity. The structure of this pattern was examined in its main directions when we were dealing with Hegel; and we were thus enabled to obtain a good survey of the interconnection between the different philosophies and of the simple law that governs their historical development.

Great as are the superficial differences between the systems of the different philosophers, they are at bottom the same. The differences are due in the main to the fact that they look at things from different standpoints, and that they do not trace the connection between the facts in the same direction: their courses are divergent. Again, they do not look at facts in the same light: the ideas of different philosophers grew in different environments, and they found expression in different forms. But, in spite of the apparent contradictions between the various systems, they are not, in fact, incompatible with one another; on the contrary, they complement one another, and in their main points they agree.

Such considerations suggest the question why, in the intellectual life of mankind, the ideas of thinkers like Descartes, Leibniz,

Schelling, Fichte, and Hegel came to be pushed into the background, while others took their place. The reason was not that they were wrong, nor that they had a valid kernel inadequately expressed. The main reason was that more was looked for in them than they could fulfil, and that each was looked upon as a description of the whole when, in fact, it dealt with no more than a fraction: they afforded one view of a Whole which admits of other views if it is looked at from a different standpoint or from a different angle. Each system appeared to be striving after complete domination, while it was plainly possible to maintain other and apparently contradictory views which yet had an inner justification. The critic felt that he was dealing with conflicting views of one and the same event, when, in fact, he was dealing with different views of different *sides* of the same event—views which, rightly apprehended, were not incompatible and indeed complemented one another. One view was held to exclude all the others, while, in fact, there was room for them all. This erroneous opinion was due to the fact that there was no superior standpoint from which it might have been possible to survey the whole. Thus it became impossible to seize the interrelation between the various systems—an interrelation which in any case is somewhat obscured by the form in which they are cast, by verbal ambiguities, and by the confusion of essential and unessential. In short, it was not realized that a great synthesis of all conceivable views was possible. It was presumed that each successive system took the place of that which preceded, and each philosopher thought that his own views were the latest truth: he did not see that each was working in his own place, and that they were all occupied on the same great plan.

To indicate the outlines of this plan has been my aim in this work. Once thinkers have been made aware of the common thread that runs through all philosophy, the time will have come when all can co-operate from a new angle. No system, provided that it is based on sound common sense, will perish: it will be completed, elaborated, or adopted as a constituent part of the whole.

This is the real meaning of my argument—a meaning which surely cannot be altogether insignificant.

It was not my intention to give a complete exposition of the natural fundamental order within the compass of this book, nor

to develop all the different versions in which it has been presented in the course of history. I was compelled to restrict my scope in order that the main outlines might the better emerge. An exhaustive description would in any case be impossible, and there is no perfected philosophy any more than there is a perfected science. Even in the region of the most general fundamental relations, where we can penetrate the farthest, many questions remain unanswered.

For example, many problems remain in connection with multiple determinateness, and more particularly in connection with its meaning when interpreted as denoting Plenitude. Ultimately we take this determinateness as given. Regarding its properties which we have mentioned up to now, little more emerged than the fact that it is given as a unity, a whole, and a uniformity; that it comprehends within itself a manifold and a multiplicity which are too vast for our grasp; and that this Manifold is arranged in stages and gradations. Thus, in the first instance, we apprehended multiple determinateness by means of a perfectly general form of relation and opposition, which we called unity-with-multiplicity. We also made use, in apprehending it, of the kindred concepts of order and gradation.

In human experience this multiple determinateness occurs only in the shape of spatial extension and temporal series. We are ourselves organic beings forming members of a gradation; and as such we are never close, temporally and spatially, to more than a small fragment of this gradation. Hence we can never seize and comprehend it with full clearness. What we apprehend in this narrow manner cannot be more than a distorted image of that which we may suppose it to denote in the supra-individual unity of the prime form, and in the infinite plenary reality which continually eludes our grasp.

We have, then, a distorted image displayed in time and space, and standing between the simple prime form on the one and the plenary reality on the other hand. The former is simple: it is the pole of order, and the multiple determinateness and its unity is, so to speak, rooted in it; the other is the counter-pole, where the multiple determinateness is scattered into its infinite multiplicity. There is no near or far, no sooner or later, and consequently no cause and effect in either of the two poles; "there is neither husk nor kernel, but all is simultaneous". As human beings, however, we are unable to imagine anything without such forms of relation as near and far, or sooner and later, and what we do see by the

help of these forms is fragmentary. Consequently, imagination will never permit us to penetrate to either of the poles. On the other hand, our system of forms of relation does permit us to render an account of certain properties which can be predicated even of the poles and which are independent of merely relative points of view. By this means we have at least a formal road of approach to each of the two poles. Yet we can seize this multiple determinateness neither as a Whole and One, nor as an infinite plenary Reality; all we can do is to construct it in either of these two forms as the liminal value of an infinite series. The act of construction is a merely formal procedure.

In connection with the unanswered questions relating to multiple determinateness the concept of the serial infinite plays a peculiar part—one which in our present state our minds cannot completely comprehend. In the present work I have touched on this concept in a number of passages; some further remarks will be found in my *Wirklichkeit, Wahrheit und Wissen* and *Das Vollwirkliche und das Als ob*.

When dealing with these and with many other questions that still await solution, all that we can do is to attempt to grope our way into the unexplored country. But such a method is non-rational, however well it may have been prepared, and however much light may be thrown on it by our analysis.

But this was not all. We saw how in their ultimate development our analytical arguments tended in the direction of the special sciences. We saw emerging in the distance the outlines of physics, psychology, æsthetics, ethics, and the theory of law. I have spoken more fully about this tendency in other writings. Here it must be noted that the transition from our present system to these sciences cannot be effected rigorously or completely. Once more we feel that a barrier stands in the way.

What is the importance of these barriers? We can look for some distance beyond them; we can also attempt to pass over them and to grope our way into the uncharted wilderness. In any event, we have a right to hope that a day will come when we shall be able to set the barriers aside. Even to-day our knowledge is vastly greater than that of our ancestors; and posterity will continue to labour on the work on which we have toiled. They will reach to a profounder and a more accurate knowledge and will penetrate far

beyond the barriers that, standing in our way to-day, allow us no more than a longing look into the land that lies beyond.

For future generations it will be easy to reach the knowledge which we have striven in vain to attain. In the process they will be able to avail themselves of the experience of the present generation, and they will be able to continue the erection of the foundations, the plan of which we have handed down to them.

It is possible that our descendants will be better fitted for their task physically and intellectually. Biological evolution seems to point in that direction; the faculty that is steadily trained by successive generations is apt to grow and to win a firmer foundation. In the first instance it is only the individual who rises in this manner. But even if he passes on no more than the rudiments of his developed faculties, and if his descendants will not allow the inherited disposition to perish through disuse, it will grow strong in the stock, and in the end a distant generation will be able to begin with that which used to be the crowning achievement of a lifetime. This will be the easier if learning and tradition co-operate to give them a clear and orderly view of the experience of the past.

In consequence, much that was a revelation to an earlier race will appear natural and obvious to a later generation. They will be endowed at birth with a knowledge and a power which we have to win by painful effort, and they will be born with dispositions which we lack entirely.—It has long been a familiar fact that this is the case for the body as a whole. But what applies to our muscular structure, the nerves, and the senses must surely be no less true of the mind.

If we take the sum total of modern knowledge and of all that can be established by strictly scientific methods, and compare it with the knowledge and the power of mankind, even as it was a few centuries ago, the advance will appear enormous; yet it is small compared with all that must needs be left to the labour of future generations. But though their actual intellectual possessions may some day be greater than ours, our pleasure in the advance along the way to knowledge need be no less than theirs; and their own position with regard to their descendants will be no better than our own position with regard to them.

All this is, of course, simply a kind of metaphor. We all are members of a series, and each of us dependent on all the rest. Even the most distant generation will never grasp the full meaning of

the series, because it will never be able to comprehend the series as a totality; and it will never be able to grasp the series as a totality because the series is infinite.

2. The Importance of the Irrational in Philosophical Systems

Development—Non-Rational Gropings—Non-Rational Instinct—Non-Rational Driving Forces of Volition and Cognition—The “Unconscious”, “Soul”, and “Life”—Communication of Non-Rational Ideas—The Development of Cognition.

Appreciation of Non-Rational Knowledge.

Distinction between Non-Rational and Rational in Philosophical Systems—Gradual Reduction of the Non-Rational Element during the Development of Philosophy.

Necessary Part Played by the Non-Rational in Concrete Questions—Vital Questions—The Non-Rational in the Sciences—Examples—The Philosophy of To-day and of the Future.

What will be the future course of Philosophy?

History, as well as daily experience, suggests the answer. Where we lack the clear and certain guidance of reason—in other words, where “rational” methods take us no farther—a certain instinct will often lead us on for some distance. Past experience has crystallized into an instinct for the truth that allows us to advance gropingly into the unknown. In its way this, too, is a kind of knowledge, which, though non-rational, must not be despised merely because its sources are obscure. In many instances it is the precursor of rational knowledge.

On the other hand, we are also liable to grave errors in the course of such an advance, and, in fact, such errors have often enough occurred. They have served to undermine confidence in this kind of philosophy, the more so when their results were set out in a form that combined a phantastic shape with the claim to rigid exactness.

This non-rational kind of knowledge invariably has a strong personal colouring. Until it is reduced to a rational form it is difficult to determine the exact element of truth that it contains. Valuable revelations may be hoped for from it, if the author has a keen sense for the significance of the facts that he has apprehended. A thorough devotion to the rational regions of knowledge affords an admirable training for this non-rational sense. Those who have obtained some knowledge of these regions through

previous work in them will find that the best foundation and guidance for a further intuitive advance consists in such certain knowledge as has already been established by their own or the efforts of others. Such a course will save them from a false estimation of the results of their work.

Non-rational instinct usually becomes more sensitive with advancing age. It is easy to see the reason. The innumerable contacts with things and men result in the end in training the mind to appreciate the deeper events of the world; we learn to judge appearances and to appreciate their inner order. Not only this: experience also gives us ideals to pursue and principles to direct our action. Gradually we learn to understand the meaning and purpose of life.

This ripening is not the same in all men; the greatest maturity is reached by those who look within and without with a ready and open mind, and who know, not only how to see, but how to ask the right question.

There is a non-rational driving force that controls our cognitive faculty; and there is also a natural instinct for truth which stimulates us and sets us far on the road towards new revelations. Now this Subconscious or Unconscious is like a kind of other self thinking within us and for us. In sleep and waking it is the flowing source of dreams and phantasies. It suggests the will to good and the will to evil, and inspires us with so-called premonitions. It is our guardian angel, a waking and ready helper in need.

At the same time it is also the source of our lower impulses. But, while supplying the impulse, it also supplies the inhibition that allows us to retain the right balance. In many respects the unconscious is better, wiser and more potent than the conscious self.

In a manner the unconscious is alien to us. Yet at the same time we *are* the unconscious: it is a second and a different self. It is tempting to see in it the real foundation of human life and nature, and there is an element of truth in such a view, especially if we understand by life and nature not the most primitive forms of relation of our existence, such as we looked upon them at the first stages of our analytical development, but rather those more complex structures which we called gradated individuals. Our empirical ego is based on the existence of a kind of higher gradated

entity; and it is impossible for us properly to apprehend the former unless we pay some attention to that mysterious side which plays so important a part in controlling our thoughts and our actions. We cannot but allow it some element of soul, although it eludes our conscious thought and apprehension, and the power of recollection attaching to these faculties.

In the main this is a question for physics and psychology; it cannot be answered from any general principles. At the same time we can understand how Hartmann came to his attempt to subsume this "Unconscious" under a concept derived empirically, and to treat it as something higher and more universal than conscious thought, over which he assigns it precedence.

It would almost appear as though the relation between conscious and unconscious thought is like that between the waves and foam of the surface of the sea and the depth beneath. For us the surface is what is most striking and most important; and yet the play of the surface is insignificant compared with the infinite variety of the life that exists in the unimagined deep. The darkness of this deep resembles the play of the forces that control our conscious thought and action, and it escapes our perception and recollection almost in its entirety. Ideas, habits, recollections, associations of ideas, and impulses rise from an unconscious depth, and frequently surprise us by their strangeness and their peculiar adaptation to the needs of the moment. By "soul", or by the more general term of "life", we denote that mysterious system of forces which is the source of these events.

It must, of course, be admitted that a logical definition of "soul" and "life" is yet to seek. These terms are merely indications, and of the facts towards which they point we can at best grasp a small fragment. They represent an exceedingly complex structure. It belongs to the *class* of the gradated individual, while its *details* remain to be discovered by physics. Until this has been achieved we must use the terms "soul" and "life" to indicate a direction in which we must attempt to advance beyond the limits of rational cognition, and can, in fact, gropingly advance for some little distance. But, unless we are careful, we shall lose ourselves in those regions which have been the scene of non-rational controversies from the earliest ages.

The mysterious "soul" which I mentioned above casts up much valuable flotsam from its depths. We can, if we desire, increase this yield, and if we are ready and prepared we can seize and make

the most of this "flotsam". We must train ourselves to notice the smallest stirrings of the soul, and to seize, pursue, and associate ideas; and we must possess the resolution not to make a halt before we have completed our journey.

The knowledge obtained in this way will frequently be no more than a manner of feeling; its only use will be purely subjective. It will admit of scientific exploitation only if we can establish a strict logical connection between it and the sum total of our experience. The more complex this system of concepts is, the more difficult will it be to reduce it to logical form, to lay it down in terms of speech, and to communicate it to others. Much of that which is given expression in this manner takes on so strong a subjective colouring that it remains enigmatic to the outsider.

Nevertheless, the possibility remains that such communications, however strong their subjective element, may evoke in another person ideas which are not wholly alien to those which the speaker is desiring to express. The instinct for truth renders us receptive: it possesses a great "range of resonance", and it allows us to catch some notes before we are fully "tuned in".

Once we have established contact with the new set of ideas, another force enters into play. Like the first, it has its origin in the instinct for truth. This force is the force of contradiction. It enters into play as soon as we become aware of the inadequacies that attach to every human attempt to apprehend or to set out given facts, to every ordering of our view of the world, and especially to non-rational knowledge. This driving force takes us from *severance* to *opposition*, and reveals to us another aspect of the facts, in which they frequently appear in a clearer light.

We have seen that the non-rational driving force of cognition manifests itself in two distinct ways: in the instinct which leads us towards the truth, and in the rejection of the inadequate. The existence of these two forces brings it about that the struggle of mankind after a settled view of life and of the universe in many instances takes the form of an oscillation: opinion swings, so to speak, like a pendulum about a centre of gravity. It thus ranges through the whole of knowledge: gradually the swing of the pendulum loses range, the sense of direction grows more sensitive, and the feeling for the truth becomes more generally delicate. Thus a permanent gain for all results from the novel manner of perception of an individual; and this in spite of the fact that the manner of perception was non-rational. In the course of generations

germs of knowledge ripen into a surer and more comprehensive apprehension, and, finally, into rational understanding.

History shows us the change from crude materialism to one-sided idealism taking place more than once; but each swing of the pendulum brought a gain, and the sum-total of knowledge grew steadily.

In the individual the faculty of cognition does not invariably follow the simplest and most direct way. Mankind as a totality, on the other hand, would seem to follow a more direct course. Measured against the advance of the individual, that of mankind is slow; but it would seem that during the last five thousand or six thousand years it has accelerated steadily and rapidly. During this period many powerful impulses were received from various sources; they came from China, from India, Mesopotamia, Egypt, and, 2,500 years ago, from Greece. But in each instance the movement died down after a few centuries. The classical period, which produced men like Aristotle, Plato, Euclid, and Archimedes, was followed by a thousand years which would appear to have brought the world no new spiritual discoveries. During the last four or five centuries, however, the advance has been rapid, and during the last hundred years has grown so swiftly that it has now become impossible to follow the overwhelming flood of new knowledge.

What may be called sympathetic knowledge is like every other kind of intuitive, instinctive, or non-rational knowledge in that it does not frequently agree absolutely with the natural order of facts. Often the visionary is unable to express this order otherwise than by means of periphrases and symbols which are unintelligible to the uninitiated; so that, in the first instance, his exposition is valuable only as a personal document. Frequently this kind of understanding, while it embraces no more than a small fragment of the facts, mistakes them for the whole; or else it takes an isolated fact to be of universal application; or, again, it apprehends a universal concept, but fails to grasp its connection with the concepts with which we are familiar, with the result that it is practically impossible to convey it by means of language.

These natural deficiencies have caused non-rational knowledge to fall into a certain disrepute, causing some of the uninitiated to lose confidence even in scientific philosophy. This is not strange, since philosophy is a study where it is not easy for the uninstructed

to distinguish between a scientific exposition and the kind of notions that are the result of free intuition or sympathetic understanding. In the region of the most abstract ideas it is difficult even for the expert to extract the true and scientific value of new ideas at the first glance by a mere perusal of the author's words, especially if these words are strongly marked by the idiosyncrasy of the author.

Nevertheless, we have no right to despise the intuitive non-rational philosophy of serious thinkers. Such thinkers have functions of their own: they stimulate, strike out new paths, and discover treasures which are overlooked by others, and their activity is essential for the welfare and advancement of philosophy.

It is true that instances occur where curious fancies are produced, fancies which run counter to inner and outer experience alike, and appear to have their sole origin in feverish imagination or morbid sensibility. Such phantasies may appeal to the æsthetic sense or to sensibility, and where this is the case there is no harm in assimilating such fancies. Strict philosophy, however, must reject them, even if they are cast in a scientific shape and enjoy the popularity of such systems as anthroposophy and theosophy. They have no logic in their structure and no contact with experience.

Strict science can exist only where the concepts are exactly defined and the connection between them is established by rigorously logical methods; or where, if this is not possible, rationalization has been recognized as a task to be undertaken and an effort has, in fact, been made to fulfill this task. Strict science permits only the *fundamental* axioms to be non-rational, and these axioms must be clearly defined, and, if possible, their relation to experience must be elucidated. Accordingly, no attention must be paid to those opinions which assert that the non-rational plays the decisive part in the body general of world-views. At any rate, such a world-view would not be a scientific philosophy.

It is one of the tasks of a history of philosophy in the wider sense to segregate the rational from the non-rational elements in all the historical systems, and to show what parts of the latter have at a later time proved capable of rationalization. In a uniform and effective manner this task cannot be undertaken until we have won a higher standpoint having so wide a rational foundation that doubt and controversy become impossible. Once this has been

reached we shall also have a standard by which to measure the degree of rationalization that has been achieved by the several systems.

All knowledge is tainted with a certain element of the non-rational; however rational an exposition may be, a greater or less remnant remains that defies rationalization. Strict science demands that it be separated as definitely as possible from the rational elements, or, at any rate, that attention be drawn to its non-rational nature. One part will always remain non-rational—that part which we treat as “immediate fact” or “absolute datum” and make the axiom which stands at the head of the system. Most philosophical works, however, contain a considerable body of non-rational elements over and above these, and their value does not depend on the reduction to a minimum of the non-rational content. Kant’s system contains a mass of fundamental concepts that stand side by side and are not only non-rational but in part are not even properly defined; yet so great was his intuitive power that he succeeded in creating a comprehensive and profound system, and we have actually seen that to a great extent this system could be rationalized. With later philosophers, as with Kant, the non-rational element frequently is very considerable. It is certain, however, that in the course of centuries the non-rational element in philosophical systems has decreased relatively to the rational element.

It was the ambition of the schoolmen of the Middle Ages to cast the results of their thinking in a strictly rational form. Nevertheless, the non-rational element in their systems was particularly great. It was Descartes who undertook to eliminate the non-rational elements wholly and definitively. He desired to erect a strictly rational system; yet the units from which he built up his system, and the axiomatic propositions which he used in order to establish an interconnection between them, were equally non-rational. His concepts of Substance and of God were particularly non-rational. The same criticism can be made of the manner in which he passes over from the immediate facts of consciousness to the substantial ego, and from the contents of thought (which permit him to speak of the objective reality of images) to substantial space. Where a rational method took him no farther, he appealed to the *lumen naturale*. This appeal was used, not only to justify assertions about simple given facts and ultimate laws of thought, but also to justify assertions about complex relations which Descartes believed to be

simple and indissoluble simply because he had not sufficiently penetrated into them.

In Kant's *Critique of Pure Reason* it is the concept of the mind and of its various faculties that is non-rational. This also applies to the concepts of time and space, to the categories, and to the ideas, in so far as Kant simply takes them as given and fails to establish a firm, inner, simple, and necessary connection between them and the "faculties" of the mind; it is the rational connection that is lacking.

If we desire to give a scientific ordering and exposition of knowledge, there can be no doubt that our aim should be to penetrate as far as possible in the direction of the rational, and that we should rather be content to remain within the narrowest of regions than to transgress the limits of certainty and to enter upon adventures which, though they might lead to new discoveries, would take place beyond the limits of strict science. On the other hand, where pioneer work has to be done, it is intuition that must lead even the rationalist.

More than a century ago Bardili laid stress on the great importance of intuition and of the irrational in philosophy. Latterly there have been philosophers who have elevated irrationalism into a principle. Bergson's ideas on the importance of intuition have proved particularly stimulating, and Müller-Freienfels has made the attempt to set them out in a clear form. Though the emphasis laid on this idea has been much exaggerated, it will prove not to have been without advantage for the future of philosophy.

There are certain subjects which are so complex that it is impossible to make any noteworthy advance in them by rational methods. Yet we are compelled to make our way through these regions as best we can, for mankind demands of the chosen representatives of science, and especially of philosophers, that their trained intellectual faculties shall be placed at the disposal of humanity. Among these regions are considerable parts of ethics and law. Here a certain amount of rationalization can be effected, and to effect it has always been a favourite task of philosophy. At the same time there are innumerable questions of day-to-day life and action where the case is so complicated that we are compelled to rely almost entirely on ourselves and our intuition. Even the distinction between right and wrong cannot, as a rule, be effected by rational means, and it

is certain that reason cannot be our guide in the thousand actions of everyday life: we cannot even move our limbs in the requisite manner in order to obtain a given result by the light of reason alone. Whenever a function in which we have become expert by training, practice, or custom adapts itself to the given facts of an individual case where the need for its exercise arises, the source whence it flows is unconscious and non-rational. This is the source that we have in mind when we speak of instinct, skill, experience, or common sense. All these faculties are founded on the mysterious and unconscious something which dominates the whole of our intellectual life and which is the source of the free flow of fancy and of the capacity for recollection.

We have seen the non-rational element in the answers which we give to the complex questions of every day. The same element plays a part in the answer to every really difficult question. When it wishes to penetrate into undiscovered regions, even strict natural science has no other method at its disposal. One way of advancing only is possible. The way is led by the intuition of minds of a more than average instinctive sensitiveness; analytical reason follows, consolidating the position and making practicable the road for the rest of mankind. The advance into the unknown begins with a hypothesis, and a hypothesis is nothing but a more or less non-rational structure obtained intuitively. Once it has been set up, it is compared in all its implications with experience, so that, if possible, the hypothesis can be tested and rationalized.

Where complete darkness prevails, and science is either unable to effect any progress or fails for any reason to co-operate, these obscure questions often become the care of untrained or partially trained minds. The result of such handling may be seen in the development of spiritualism. Spiritualism is an offshoot of magic; we can fairly treat it as an absolutely non-rational branch of psychology. In the first instance strict science declined to have anything to do with it. In consequence it became the hobby of people who knew nothing of scientific methods, or, at any rate, were completely ignorant of psychological questions. Yet out of these childish notions a definite body of knowledge has developed—knowledge which, if not fully rational, might easily be rationalized if desired. Suggestion, hypnotism, unconscious movements and impulses, mechanical thought-reading, and many other curious phenomena have become scientific facts with scientific explanations. Yet in the main they have been extracted from the confused dreamings of

the spiritualists, which are thus seen to be not entirely without sound foundation.

We may assume that the same complex of phenomena will prove the source of further rational knowledge. For example, Telepathy, where the mental events of one person are influenced by another without any intermediary action by the organs of sense with which we are acquainted, seems about to enter into the sphere of strict science.

Again, astrology and alchemy were absolutely non-rational systems which have now been brought under the rule of sciences and have been replaced by astronomy and chemistry. Their adepts were pioneers: they collected and classified facts in a region where modern progress has been slow and attended by enormous difficulties. There are many regions on the borders of philosophy where such difficulties stand in the way of advance. Hegel himself penetrated into these regions by almost wholly non-rational methods when he came to elaborate his Natural Philosophy.

To-day philosophy is more cautious. Supported by the experience drawn from other fields of investigation, and by its own age-long struggle for a firm foundation, it has learned how to adapt itself to the facts with a surer skill; it has obtained better lines of direction, which it reads and follows with a greater assurance. It is more prudent in its judgment of the non-rational, and in distinguishing between it and the rational.

Perhaps the advance of philosophy will be slower than that of any other science. It has learned how to moderate its aims. But the line of its advance leads upwards; and so long as a finite spirit apprehends the marvels of the universe and finds in them matter for reflection, so long it will find unanswered problems undiminished in number by the problems which philosophy has answered. Human intellect will continue to attempt the solution of these problems by non-rational methods, and will continue to establish rational connections between the latest revelations and older discoveries.

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